# A Lecture
ON
# DENDRITES AND DISEASE.

*Delivered at the National Hospital for the Paralysed and Epileptic,*

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GENTLEMEN,—If a theory explains many facts otherwise obscure it is not thereby proved to be true. This effect has small weight if the theory has no other support, but if it rests on carefully observed facts the circumstance that it harmonises and elucidates does increase the probability that it is true. Sometimes, therefore, it is worth while to consider this effect alone, if we are careful not to mistake it for proof or give more weight to it than is just. It does the service, also, of directing attention to the more important features of the problems concerned.

You know the change in our ideas of the central nervous system that is implied in the word "neuron." Some of you, indeed, may not know it as a change because you have learned nothing else, the changed conception being now treated as current knowledge. Yet its full significance is still imperfectly discerned and its influence on our conceptions of functional disease of the nervous system has obtained hardly any recognition. This is so great and so elucidating that it merits careful consideration. In trying to point out what influence on our ideas the neuronic theory should have I must assume it as a demonstrated fact. There is still some difference of opinion regarding its full details, but the leading facts are stated as our present knowledge in the modern text-books of physiology. Taking them as such, my object now is to consider what influence they should have on our conceptions of the action of the nervous system, especially in its perverted forms.

Before considering this I must take care that you have the leading facts clearly in your mind. It is never safe to assume knowledge. So I will remind you of them, without burdening you with the names of the workers to whom we owe them. These are indeed well known and only the essential points that have been established really concern us. For the new knowledge we are indebted to histologists; their importance to us depends on the change in physiological thought they compel. Physiology is the science of life but we hardly realise to what a vast extent it is dependent on the labours of the anatomist simple and minute. The lessons of simpler structure have long been learned. The limits of microscopic vision are nearly reached, but the power of chemistry has been invoked as a differentiating aid to distinction and discernment, and it is entirely to this that we owe the new knowledge which concerns us to-day.

It was formerly thought that there was a continuity of conducting paths through all the complex structures of the central nervous system, that through the cells and fibres there was no break. It is now held that each "neuron"—that is, each cell with the processes and fibres that spring from it—is separate from every other. The terminal branchings of the processes do not unite; they end in contiguity to others, not in continuity with them. Instead of simple conduction from one to another throughout the nerve centres, brain, and spinal cord, there is a break between the elements; it may be minute but it has to be crossed and the crossing apparently involves a break in the process. Instead of the nerve impulse passing on unchanged when it reaches the termination of the neuron which has brought it, it *excites* an impulse in the adjacent neuron. A process of excitation is essentially different from conduction. That which is excited depends more on the structure in which it is produced than on the stimulus that acts on it. A slight exciting impulse may cause an energetic effect in the structure on which it acts. We can thus understand better the fact that a touch on the sole may excite an energetic movement of the leg. Not only may the energy excited be vastly greater than that which excites but the latter may act on the endings of many neurons. Thus the apparent conduction through the nerve centres is really by a succession of neuronic impulses.

Where is it assumed that the break occurs and the simple conduction through one neuron becomes a process of stimulation of the next? To answer the question we must consider the facts of structure. Each cell has, besides its long nerve-fibre process (the axon), other processes quickly branching and apparently disappearing in the almost homogeneous-looking substance in which the nerve cells lie and in which are also the minute blood-vessels. I have called it the "matrix" as an indifferent term. For the same reason it has been called "the grey." These branching processes were formerly thought to consist of protoplasm and to be concerned only with the nutrition of the cells. Better means of observation have revealed the fact that they consist of fine nerve fibrils which separate in the branching of the process. This fact caused fresh attention to be given to a half-forgotten observation by Max Schultze, made 40 years ago, that the axis cylinder of a nerve fibre is not a homogeneous body but consists of numerous fibrillæ, each continuously separate from the others, and that these diverge as the fibre widens to join its cell. Max Schultze's observations have been abundantly confirmed and so also has another fact he discerned—that these fibrils pass through the cell body without interruption. The fact cannot be observed of all the fibrils but it can be of some, and it is a condition that we cannot doubt if true of some must be true of all. None have been seen to end in the cell.

The fibrils thus pass through the cell body to the branching processes or dendrons, and conversely some fibrils of these can be seen to pass into the cell body towards the axon; others can be clearly seen to curve near the cell wall to another dendron. Thus, the dendrons communicate with each other through the cell and also receive the fibrils of the axon. Their finer divisions or "dendrites," as I said, seem to disappear in the matrix, but by silver staining they are revealed and seen to end in a small knob or in a point and their terminal portion bears small bud-like projections on the surface. It is this fact of their termination (discovered by Ramon y Cajal) which is relied on as evidence of the discontinuity of the neurons. It is another fact which, if demonstrably true in some instances, may reasonably be assumed to be true in all. Some investigators, indeed, have thought that a fibrillary network outside the cell may afford a means of union between conducting structures but others see in it only a special condensation of a trabecular-supporting substance believed to form the spongy framework of the matrix. Before staining agents can reveal structure hardening agents have to increase the consistence of the substance and multiply many times any original difference that exists, and in this lies room for varied misinterpretation.

To prevent mistake I may point out that our nomenclature is imperfect. The branching processes are "dendrons" and their branches "dendrites," but we have no other name for their terminal portions. The long axon, of which some cells have more than one, also ends in branches which we term "axites." If we wish to speak of all the terminal branches of a neuron—dendrites and axites—we can call them "neurites."

The significance of the fact that the fibrils of the axis cylinder pass through the cell and do not end in it is very great. On it all the practical importance of the neuronic theory depends. Yet, strange to say, it has been imperfectly recognised, even by some of those who have contributed largely to the establishment of the facts, although others have seen it clearly. The continuity of the conducting fibrils precludes the old assumption that the nerve impulses arise within the cell. Where there is an unbroken course there can be only conduction. It is true that impulses can be produced in a conducting fibre by physical or electrical irritation, but they are quite unlike the ordered impulses essential to function. For these we can only look to the ends of the conducting elements, that is, to the terminations of the dendrites. The cell must be regarded only as the vital centre of all the structures related to it. Many things thus become more clear. We can understand better the different direction of the nerve impulses that pass through the cell, to it, through it, and from it, and also the fact that this has no necessary relation to the direction of the vital influence which is always *from* the cell. We are better able to understand the marvellous

rapidity of the process of nutritional renewal by which lost energy is so promptly restored. The substance in which the dendrites lie must be the reservoir of plasma whence the molecules are renewed and the process there must be far more easy than it could be within the inclosed nerve cell.

It is natural that the old idea is not easy to give up. As long as the relation of cells and fibres has been known their size naturally suggested, almost compelled, the idea that they are the sources of nerve energy. The analogy presented to a galvanic battery helped to strengthen the opinion. But the wires end at the galvanic cell and the discovery that the fibrils do not end in the nerve cell destroys the analogy, or rather transfers it to their multiple endings. Multiplicity may compensate for size and may even more than compensate. The dendrites related to each nerve cell may be 20 or 50 in number. The molecules of nerve substance may do more in the aggregate if grouped in smaller masses than they could if collected together, and, as we have seen, persistent work, which depends on nutritional renewal, must be much facilitated by subdivision.[1]

If conduction throughout the nervous system is by a succession of neuronic impulses, each of which is excited by a process of stimulation of the neurite endings, we may perceive one noteworthy fact. The conception brings into harmony the origin of the nerve impulses in the centre and in the periphery. The sensory nerves, at their distal ends, divide and ramify—that is, their fibrils separate into smaller and smaller groups and finally end in structures the special character of which enables various forms of energy to excite nerve impulses in them. The impulses thus arise by a process of stimulation and their degree is influenced in part by the nature of the stimulated structure. So it seems to be in the nerve centres; there also each neuronic impulse is excited, not conducted. But the stimulating energy there seems to us to be of the same nature as that which is excited, although the latter may differ in degree.

Facts have been described which seem to constitute definite ground for ascribing to these dendrite endings some degree of contractility, a property which would be of the highest importance on account of its influence on our conceptions of disease. The dendrites end, as I have said, some in a point, others in a small knob, and they present numerous bud-like projections on the surface. The contractility which they have been thought to possess is believed to influence their size and surface, to permit the diminution or increase of the bud-like projections they bear. There is no intrinsic improbability in such capacity for physical change. They lie in a substance that is semi-diffluent and would readily permit such an alteration. A minute degree of change would make a great difference in the degree of receptivity of stimuli from adjacent dendrites, as was, indeed, suggested long ago by Ramon y Cajal, the discoverer of the discontinuity. The fibrils and their endings are believed to consist of two elements, a supporting spongioplasm and a hyaloplasm. The latter is of less consistence, but on it their function depends. Quite similar elements are now believed to constitute muscular tissue and its contraction is ascribed to a movement of the hyaloplasm in the meshes of the spongioplasm. Effective differences in nature may exist between substances that we cannot distinguish, but it is certain that muscle substance comes nearer to nerve substance in nature and function than any other known material of the body. It is a striking fact that the motion of the hyaloplasm of muscle should occur from a stimulus which reaches it by the hyaloplasm of nerve. We cannot deny the possibility that the mobility which muscle possesses in so high a degree may be possessed in some measure by the central nerve endings.

Because we cannot deny we are not therefore justified in affirming. What evidence is there of dendritic mobility? We must put aside as incredible the assertion that cilia-like movements of the dendrites have been actually seen in a minute translucent crustacean (Leptodera). More important is the observation, confirmed by several workers, that the influence of chloroform and morphine is to make the dendrites shorter and especially smoother in surface. Such agents are said to cause the projecting buds almost to disappear, a change that would greatly lessen the extent of receptive surface. Another asserted fact is still more significant. Such a change is said to reach a very high degree in hibernating animals when the condition is compared with that in the brain of the same animals in their active state. It is unfortunate that more attempts have not been made to confirm or disprove this observation. It is one of the highest importance.

We cannot separate hibernation and ordinary sleep. The difference between them is simply one of degree. The fact suggests that ordinary sleep may depend simply on dendritic retraction. We may conceive that the process endings of the higher cerebral structures are thus withdrawn from the influence of the lower structures which act on them in the waking state of continuous excitation, the nerve elements pass into comparative rest, in which nutritional renewal can take place without more disturbance than the gentle functional activity which the mere process of renewal seems to involve. When this is adequately achieved the dendrites may lose their retraction and again become receptive, or a vigorous impulse to some of the lower neurites may be sufficient to bridge over the increased space and reach the resting structures, to re-excite the active state of approximation, a state which spreads at once through the whole series. By incomplete withdrawal and partial relation to lower neurons the phenomena of talking in sleep and somnambulism become compatible with the explanation. Such, or something like it, is the dendritic theory of sleep. Of course it is hypothetical but it constitutes an attempt to explain sleep for which we may otherwise search in vain. Consider the explanation of the nature of sleep, the best that is to be found, given in Foster's "Physiology" (p. 1552). "It has been urged that during sleep the brain is anæmic ..... but this anæmia must be regarded as an effect rather than a primary cause. ..... The essence of the condition is rather to be sought in purely molecular changes; and the analogy between the systole and diastole of the heart and the waking and sleeping of the brain may be profitably pushed. ..... We cannot at present make any definite statements regarding the nature of the molecular changes which determine this rhythmic rise and fall of cerebral irritability," &c. The difficulties of assigning a dominant part either to products of metabolism or to the supply of oxygen lead to the necessity of assuming that some influence of an inhibitory mechanism must act on the respiratory centre, a necessity "which indicates that the explanation of sleep is at present inadequate."

One distinct conclusion may be drawn from the account I have abridged: it is that the dendritic theory of sleep does not replace any clear or satisfactory explanation. If it is true, it enables us to form a definite conception not only of sleep, but of many other conditions of action and inaction in the central nervous system. The facts, for instance, of more or less facile action in certain lines has been explained by less or greater "resistance" and the more ready action produced by repetition is ascribed to a "diminution of resistance." But this is merely another way of stating the facts observed. It has the semblance of an explanation but does not explain. If we conceive, and if we are justified in conceiving, that repeated activity of a certain character leads to an increased development and closer approximation of the dendrites concerned, we have an intelligible and real explanation. Muscles increase in size with use, and if the elements of which the dendrites consist resemble, even remotely, those that constitute muscle substance, why should it not also be so with them. The substance in which the cells and their processes and the distinct fibres lie is also said to consist of a mobile hyaloplasm in a network of slightly firmer spongioplasm. These are materials of which structures so different as nerve fibrils and muscle substance are said to consist. But there must be essential differences of constitution and function which we cannot disarm. We cannot doubt that much more is to be learned of this "matrix," when we remember that the dendrite endings were invisible within it until revealed by silver staining. Through it must pass the influence which one dendrite exerts upon another, an influence which may be conducted as a form of nerve energy which excites a fresh impulse in the dendrites of the neuron it affects, just as the nerve impulse passes through the sarcolemma to the muscle substance.

However great may seem the difficulties of this dendritic theory, it is worth while, after duly considering them, to revert to the view that the nerve cells are the source of the nerve impulses, and consider the same problems and difficulties in relation to them. I think it will be felt that the difficulties

[1] The chemical nature of the processes is outside the range of this lecture, but the suggestive sketch given by Dr. Mott at the close of his address on the Pathological Investigation of the Causation of Insanity (THE LANCET, June 2nd, 1906, p. 1520) seems in harmony with the views here expressed, especially in relation to epilepsy.

are not less, but greater. The less our knowledge the less we feel the unintelligible, because it is vague and undefined.

The effect of the theory on our conceptions of disease is not less than on our thoughts of normal processes. If the nerve impulses arise in the numerous dendrites which lie around each cell and are excited through the less specialised substance in which they lie, it is to them we must look for the seat of what is called functional disease. At least we must look to them chiefly. It is conceivable that changes in the matrix, through which the excitation must pass from adjacent endings, may also play a part in deranging their excitation and thus the source of symptoms may be complex. But the nerve cells can have no part in purely functional disturbance. Yet it is to them only that attention has been directed in the innumerable attempts to discern a visible cause for the symptoms, or traces of change the disturbance may have produced. If the dendritic theory is correct, it is not surprising that all such attempts have been unsuccessful. They are so, even in the case of diseases that might be expected to be attended by conspicuous alteration. The nerve cells often suffer; their degeneration entails and accompanies decay of their fibres; it is conspicuous in degenerative diseases of the brain; but no alteration accompanies mere derangement of the nerve impulses, nor should do so, if these simply traverse the cells.

Consider chorea. Its great symptom is disturbance of the motor impulses, apparently at their origin in the cerebral cortex. They become apparently spontaneous, insubordinate, irregular in time and degree, occurring when not intended, ceasing when they should be maintained. Do we not get a better conception of it if we regard it as a disorder of the dendrites instead of one of the nerve cells? If the dendrites possess some mobility a disturbance of their nutrition may derange this and we can easily picture a pathological conception of the disease. Compare with this our thoughts of the disease if the impulses proceed from the nerve cells. Much search has been made for changes in these but in vain.

Paralysis agitans is a disease that has baffled efforts to find traces of its cause or consequences in the nerve cells of the cortex. Whether search in lower regions of the brain will be more successful remains to be seen. At present we must rest on the fact that its features suggest that it is due to a peculiar senile degeneration in the motor cortex. This seat is suggested by its common unilateral course and by the occasional association of mental symptoms. But disease of the motor cells would entail degeneration of their fibres in the lateral columns but the signs of this, excessive wrist-jerk and knee-jerk, with foot clonus, are not met with in any typical case of the disease. We have had therefore to assume that it is a "peculiar form" of degeneration, which is simply pushing it back into the unknown. But the difficulty vanishes with the disappearance of the energy-producing function of the cells. The tremor consists in intermittent motor impulses in antagonistic muscles and though their arrangement may possibly be determined in the spinal cord, their origin must be sought where the impulses originate—in the dendrites of the motor cortex. We can thus understand why the cells are unaltered and their fibres undegenerated. The malady remains mysterious, but one mystery disappears if we regard it as a senile dendritic disease. A sudden shock of great alarm may cause trembling quite like that of paralysis agitans and we can conceive a sudden nutritional derangement of the dendrite endings from the shock. It is conspicuous in a frightened horse which can make no attempt to escape. On a ferry boat a horse will tremble violently because the natural effect of alarm, motion to escape, is impossible. The unrelieved excitation of the motor structures so deranges them as to cause violent tremor. In man this effect has been known to persist and endure as typical paralysis agitans. So, too, the effect of sudden alarm may actually persist as chorea. The facts harmonise with the opinion that both are cortical diseases. They do not, of course, prove that these are dendritic diseases, but the dendritic view alone makes them intelligible.

In epilepsy we have a sudden intense activity of the sources of nerve energy in the cortex of the brain, often spreading through it with instant rapidity, sometimes beginning in one spot and spreading more deliberately. On the theory we are considering we must regard its seat as the motor dendrites. We know that the dendrons are connected by fibrillæ which pass through the cells, but we can conceive that a special form of excitation may pass directly through the series, with an extension almost explosive in its rapidity. If it seems to be difficult to conceive the process as occurring in the dendrites, pass back to the nerve cells and the difficulty is at least not less.

The inhibitory character of some slight attacks must be ascribed to the reversal of the effect of a slight "discharge" and is obscure whatever opinion be held as to its seat. It is a phenomenon that seems to depend on the nature of the process and a conception of it is possible if the dendrites are its seat. The purest type of functional disturbance in the nervous system is temporary inhibition. An upper canine tooth was extracted; there was immediately complete drooping of the eyelid on that side and for several hours it could not be raised. Stimulation of the fifth nerve causes closure of the eyelid to save the eye from danger. For this there are relaxation of the levator and contraction of the orbicularis. By the dendritic theory the stimulus may be conceived to have caused a contraction of the dendrites of the levator nucleus in such excess that it was long before it passed off and allowed them to receive the impulses to cause contraction in the muscle. Thus we may conceive a physical mechanism for the arrest of action which, if true, is a distinct gain to our clearness of thought.

Few can doubt the reality of what is called hysterical hemianæsthesia. It is a definite fact that some patients are unable to feel pain on one side, on the limbs and body, while feeling it acutely on the other side, and that this loss may suddenly disappear. It must therefore be of what we call "functional" nature, and there, in mystery, we have to leave it. But the dendritic action enables us at least to form a conception of its nature, although not to explain it. During sleep it is assumed that all the dendrites by which the highest centres are in relation to the lower undergo a change of form by which they cease to be susceptible to any but very strong excitants. In this strange hemianæsthesia, from some cause we cannot fathom, such a change may occur in the highest sensory centres and it prevents the impulses of pain reaching those that subserve consciousness. The receptivity may be suddenly restored by some influence which permits the dendrites to resume their normal state, and a special condition of the highest psychical centres may have this effect. Except by such a hypothesis, the facts are wholly unintelligible. It is not conceivable that the will can cause pain from one half of the body to be unfelt. It must be some physical mechanism such as the theory presents. If, as some believe, loss of sensation occurs in part of a limb from true functional disturbance in the spinal cord, it may have the same explanation, since wherever nerve cells—i.e., distinct neurons—intervene in a conducting path, the transmission must be by stimulation of their dendrite endings. This, too, may be the mechanism of the peculiar inability to expel the contents of the bladder which sometimes results from an operation on the rectum. To say that such phenomena are the result of "inhibition" is little more than to cloak our ignorance in words, for it is only a statement of the facts in other terms.

So with many other problems of the action of the central nervous system, both normal and abnormal. Those I have mentioned are enough for my purpose, which is to show how great is the practical importance of the asserted facts and of their significance. They enable us to form conceptions of normal and abnormal action not only clearer but distinctly in advance of those that before were possible. When once we have become accustomed to them it is not easy to go back to the ideas they displace, and we cannot but desire that the new may be proved to be true.

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# A Lecture
ON
# STUTTERING.

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LADIES AND GENTLEMEN,—Although this common complaint does not cause impairment of the general health it is a most serious disability. It is not merely an annoyance to the stutterer himself and a trial to those with whom he converses but it closes to him many careers, such as the public services. In most walks of life, too, a stutterer is severely handicapped when trying to gain employment. Unfortunately, its seriousness does not impress itself until he has reached adult life, when the habit is extremely difficult to overcome. It is, therefore, important for the medical adviser to make parents realise the importance of attending to the defect while the boy is young. It is true that many, perhaps the majority, of those who stutter in childhood recover spontaneously but if the defect continues after the age of eight years it should be seriously taken in hand. Between the ages of eight and 12 years, when boys are old enough to understand what is required of them and not too old for the habit to have become ingrained, is the best time for successful treatment.

Stuttering is a very common and world-wide affection. A stutterer was often introduced as a comic character on the stage in Greek and Roman days as in our own. It is common in the East and in China it has the suggestive name of "tchi-ko"; it is also known among the negro races of Africa. In this country it appears to be especially common and occurs among all classes, being about four times as common among boys as among girls. It usually begins in early childhood. It is often said loosely that a child has stuttered "ever since he began to talk." But careful inquiry usually shows that at first he talked in the ordinary way and that the stutter did not make its appearance until the age of three or four years. It may commence much later, especially at some epoch in the child's life, such as at the second dentition or when he first goes to day school or boarding school. At such epochs, too, a slight stutter often becomes intensified and one which has been recovered from may reappear. A similar reappearance of a lost stutter may occur if the boy goes to live in a foreign country where he has to talk in an unfamiliar language.

Of the etiology of stuttering we know nothing definite. Direct inheritance is rare and possibly imitation is the chief factor when father and son are affected. There is usually a well-marked neurotic inheritance, others in the family having various forms of nervous complaints. But I have not been able to confirm Charcot's statement that stuttering and ordinary facial paralysis frequently occur in the same family. Shocks, frights, and debility after some acute illness are the causes to which the onset is most frequently attributed by parents. Imitation is undoubtedly an occasional cause, children having often been known to start the habit when put in charge of a stuttering nursemaid. A friend of mine who was extremely fond of horses and was hardly to be kept out of the stables acquired a most obstinate stutter from the groom. Adenoid vegetations are often met with and are important as a predisposing cause, since they tend to prevent the proper filling of the chest with air. When present they should be removed as a preliminary measure, although it must not be expected that their removal will lead to a prompt cessation of the stutter. At one time it was supposed that there were malformations of the mouth and tongue, but the fact that the stutter is only occasional would be sufficient to dispose of that idea. Early in the last century there was a short period of surgical enthusiasm based on this erroneous notion and extensive divisions of lingual muscles were carried out. As was to be expected, no improvement took place and in many instances the results were disastrous. The defect is not a structural one but is due to some faulty control of the nerve centres over the muscles which bring into play the mechanical arrangements for the production of articulate speech. We must therefore spend a little time in briefly reviewing our knowledge of the production of speech. Those of you who want fuller information should read Wyllie's splendid work on the Disorders of Speech,[1] which deals not only with stuttering but with the development of speech in the child and in the race and also with aphasia. The matter of this lecture is based on Wyllie's teaching.

In the production of speech we have three mechanisms under control of the central nervous system, each with a complex arrangement of muscles:—(1) the expiratory muscles to supply a blast of air; (2) the laryngeal muscles to approximate the vocal cords and keep them at a suitable tension for the production of voice; and (3) the muscles of the lips, tongue, and soft palate to alter the shape of the mouth and vary the size and shape of the orifices by which the vibrating air issues so as to modify it into the various consonants and vowels. In normal speech these three mechanisms work smoothly, each coming into play at precisely the proper time. In stuttering this perfect coördination by the nerve centres every now and then breaks down. Most frequently it is the larynx supplying the vocal element which lags behind, while violent but disorderly movements take place in connexion with the articulatory mechanism. Wyllie uses the playing of a violin as a useful illustration of exact timing of two mechanisms. The bow hand (corresponding to the laryngeal mechanism) must move in perfect coördination of time with the string hand (corresponding to the articulatory mechanism). If there is the least disturbance of this coördination discord results. Beginners, like stutterers, often concentrate their attention on the string hand and may even forget to use the bow in their efforts, just as stutterers make violent articulatory efforts but forget to vocalise. It is not only necessary that these three mechanisms should work perfectly together but we must see that each of the three perfectly carries out its own function. The chest requires to expand well and to be kept well filled, the larynx requires to be adjusted so as to produce a full tone of voice, and the muscles of the mouth, &c., must be skilfully used so as to give the proper pronunciation of the consonants and vowels. Vowels are produced by altering the size and shape of the buccal cavity by raising, depressing, or varying the shape of the tongue. In this way different over-tones are produced which modify the voice into vowels. Consonants are produced by movements of the lips, the tongue, and the palate. The site at which they are produced can be grasped by getting familiar with Wyllie's physiological alphabet which shows all the consonant sounds in use in the English language.

## WYLLIE'S PHYSIOLOGICAL ALPHABET.

### I.—VOWELS.

**y—ieaou—w.**

These should be pronounced in the Latin manner as *ēē*, *eh*, *ah*, *oh*, *oo*. *y* and *w* are consonants, not vowels, but have very close relationships to the vowels, initial *y* being very closely related to *i* and initial *w* to *u*.

### II.—CONSONANTS.

| — | Voiceless oral consonants. | Voiced oral consonants. | Voiced nasal resonants. |
|---|---|---|---|
| Labials. | P | B | M |
| (1st stop position). | (W) | W | |
| Labio-Dentals. | F | V | |
| Linguo-Dentals. | Th[1] | Th[2] | |
| | S | Z | |
| Anterior | Sh | Zh | |
| Linguo-Palatals. | T | D | N |
| | (L) | L | |
| (2nd Stop Position.) | | R | |
| Posterior | K | G | Ng |
| Linguo-Palatals. | H or Ch | Y | |
| (3rd Stop Position.) | | (R) | |

The voiceless *W* and the voiceless *L* have been given above within brackets, the former being now almost confined to Scotland, and the latter being peculiar to Wales. The burring or uvular *R* is also given within brackets.

[1] Edinburgh, Oliver and Boyd.

[The exact position taken up by the lips and tongue in the case of each consonant was then demonstrated. Full descriptions will be found in Wyllie's "Disorders of Speech," Gutzmann's "Störungen der Sprache," and in Schäfer's "Text-book of Physiology."]

It is very important in connexion with our subject to remember that the majority of the consonants have a vocal element and are hence called "voiced" in Wyllie's alphabet. Beside these factors in the production of vocal speech there is another, the shape of the chest. The actual sound produced by the larynx (as can be easily demonstrated on a cat's larynx after removal from the body) is a very small "thin" sound. It is amplified and intensified during life owing to the chest acting as a resonating chamber. Hence the importance, when employing a good "carrying" voice (as when speaking in a large hall), of keeping the chest well filled and never falling back on the reserve air in the chest.

When we come to examine a stutterer we usually find that (quite apart from the stutter) he has a faulty method of producing his voice. This is best demonstrated by making him bare his chest and read aloud from some book. We nearly always find that he is a shallow breather. Respirations are mostly abdominal, the upper part of the chest scarcely moving at all. Secondly, he manages his breathing badly, allowing the air to run out until he has to take a catching inspiration (often in the middle of a sentence) instead of taking a full inspiration at the stops. Thirdly, his voice is nearly always low-pitched, monotonous and muttering, and usually hurried. Articulation is often slovenly with a tendency to clip short syllables and to slur the internal consonants of a word. As we shall see, the most important point in treatment is the removal of these defects.

Coming now to the investigation of the actual stutter you will notice that as the patient is reading there is a sudden interruption of speech at the commencement of certain words. He usually drops his voice just before the difficulty occurs and then comes to a dead stop, making evident and often violent efforts to get the word out. Suddenly he succeeds and the word is ejected in an almost explosive fashion and the succeeding words tumble out rapidly until utterance is checked by a fresh stutter. It is noticed that (except in rare instances) he only stutters on the initial consonant of a word. (For instance, a man who stuttered when saying "butter" would have no difficulty at all when the "b" occurred within the word, as in "club" or even in "tubular," where the "b" begins a syllable.) It is only in exceptional cases that there is any stuttering on initial vowels. As the patient goes on reading you will notice that the initial consonant which gives rise to trouble at one moment may be pronounced a little later with perfect ease. He may again stutter several times in a single line and then get through a whole paragraph without any hesitation. Each stutterer has his own individual defects but, speaking generally, the explosives P, B, T, D, K, G (hard) give rise to trouble most frequently, though M and N are also common stumbling-blocks. Careful note should be made of the words on which he stutters and they should afterwards be carefully scrutinised to see if they present any common feature, such as the inclusion of some consonant which the patient pronounces with a lisp. The knowledge that this letter is approaching within a word may cause panic, so that he stutters on the initial consonant of the word which contains it. A boy, for example, who cannot pronounce "l" properly may stutter at the commencement of any word which contains it, such as pillow, fluff, girl, translate, &c., and the lisp must be conquered before he has any chance of getting rid of the stutter. I may mention two illustrative cases. One was that of a young man who had a very bad stutter. When I saw him he had just entered on a professional appointment in which it was necessary for him to read out the contents of documents. This he found impossible because of his stutter. He was very sensitive about it and was contemplating resigning his post. On testing him I found that each of the words at which he stuttered contained an "r," a consonant which he pronounced like "w," calling a barrow "bawwow," so that when approaching a word with an "r" in it he would get into a panic (without being conscious of the cause) and stutter on the initial consonant. The second case was that of a clergyman who had a groundless anxiety lest he should omit an "h" when it occurred within a word. He could say "Holy, holy, holy," with perfect ease but he could not say "behold" without stuttering painfully on the initial "b."

We may now consider in more detail what takes place when stuttering occurs. Three divisions of cases of stuttering may be conveniently made: (1) Simple stuttering; (2) stuttering with associated noises; and (3) stuttering with associated movements.

1. The first form is the most common. When the stutterer comes to a difficult word he makes obvious attempts to articulate the consonant. He throws all his energies into the muscles of his lips and tongue to put them in their proper place but his vocal cords not being properly adjusted no sound is produced, and as his glottis remains closed his face often becomes congested from his fruitless efforts. His laryngeal mechanism, in fact, has not come into play at the proper time. This form is seen in ordinary people under conditions of violent emotion, especially anger, as when a furious man is unable to articulate the initial letter of the expletive he wishes to hurl at the person with whom he is annoyed.

2. Not uncommonly in addition to the hesitation or stutter there are "associated sounds." These most frequently take the form of a rapid repetition of the consonant sound before the word is suddenly ejected—e.g., g-g-g-g-ood, m-m-m-m-orning—the form almost invariably selected for imitation on the stage. Sometimes inarticulate whimpering noises are made during the period of hesitation and more rarely some catch word is interpolated. Usually this word is quite meaningless, "hedera," "nana," &c., though occasionally a real word may be introduced quite inappropriately. These associated sounds may also occur in non-stutterers. We are all familiar with the recurring "er" of a nervous speaker. Some nervous speakers also frequently interpolate a catch phrase whenever they hesitate for a word, using such words as "as it were," "in a sense," "for instance," often quite inappropriately.

3. There may be "associated movements." These show great variety. There may be simply slight grimacing or there may be most disfiguring facial contortions. Some stutterers raise their arms or fidget with their feet. In the most severe case I have seen the stutterer become red in the face, his mouth was drawn strongly to the left, his arm was drawn up, and the whole body half rotated exactly as if an epileptic paroxysm were developing. Suddenly the spasm would pass off and the body jerk back to its normal position, the word being ejected at the same instant.

*"Tricks" used by stutterers.*—It is well known that stutterers have no impediment whatever when they sing. Consequently when in difficulties they may evade the stutter by singing or intoning the word. If this is done often, however, a sing-song delivery may be acquired which is likely to persist long after the stutter has been overcome. Another "trick" is to draw in breath when any difficulty occurs. This is never to be recommended. The patient ought to be instructed to do the very reverse—to expire and to vocalise strongly. For if he draws in air he is very liable to vocalise with inspiration, the "draw-back phonation" of Wyllie. This "draw-back phonation" may be simply a little chirp or the stutterer may vocalise the first syllable on the inspiratory current of air, producing a very disagreeable effect.

With regard to treatment everything should be done to get the boy into as good general condition as possible by tonics and suitable regimen. No drug treatment has any effect on the stuttering itself. Put very shortly, the main objects of treatment are: 1. The removal of the shallow, ill-managed respiration which we have seen is so frequently present in stutterers. If the shallow breathing is due to obstruction this should be removed. Systematic breathing exercises should be taught and practised daily. 2. He must be taught to speak from a well-filled chest. 3. He must be taught to speak with a resonant and modulated voice instead of the low muttering intonation the stutterer usually adopts. It is necessary to demonstrate the difference between a full resonant voice and shouting and he must be made to practise the former. 4. He must learn to speak slowly and distinctly, making all the consonants clear. It must be impressed on the patient and his friends that this practice must be kept up until the improved mode of breathing and of using his voice has become habitual to him and that this can only be arrived at after some months of diligent hard work. If this is done special treatment for the stutter often proves unnecessary. Whenever the means of the patient permit the instruction should be carried out by the medical man himself or by some experienced teacher under his direction on these lines. Or the boy may be sent away from home to be under the care of

some specially skilled teacher. There are several admirable teachers, but careful inquiry should always be made, as some who profess to undertake this kind of work are not altogether trustworthy. Often, however, the limited means of the parents preclude the adoption of skilled teaching and we have to fall back on the services of the mother or some other relative. But it is difficult to get the boy to apply himself as diligently if a relative is instructing him. Assuming that we have a suitable relative, say the boy's mother, the first step is to instruct her, on the lines sketched out in this lecture, in the proper production of voice and speech and in the faulty methods employed by the stutterer, and she must acquire an intelligent grasp of the principles aimed at in treatment before commencing. She must be shown how to give the boy suitable breathing exercises and to give him daily practice in reading aloud in two lessons at least half an hour long. In order to insure that his chest is well filled and that he speaks with the full "carrying" voice which he has to acquire it is a good plan to make him read from some interesting prose book in the open air or in a large long room, such as a warehouse or barn when either of these is available. In towns this is rarely practicable and then the best expedient is to place the boy in an adjoining room with the door ajar or open, so that he has to raise his voice and speak very distinctly in order that every word may be distinctly heard in the next room *without shouting*. He must be corrected each time when he is letting his voice drop (i.e., speaking from an empty chest) and reminded to fill his chest at each stop. He should not be worried about his stutter at all at first. His mother should have a copy of the book from which he is reading and should underline each word on which he stutters. He should be made to practise these words by himself and run over them before the next lesson. If there is any local facility for his getting elocution lessons advantage should be taken of it. Another useful exercise for training him to keep his chest well filled is to practise singing sustained notes. He must be encouraged to take all these exercises seriously and to work at them with all his energy and with untiring perseverance. From three to six months will be required in any severe case and for the first month little apparent progress will be made. Hence discouragement and carelessness in both patient and teacher are apt to result and the medical man ought to witness the lessons from time to time to encourage the patient and to suggest improved methods to the mother when necessary. This home method which has been outlined is much inferior to skilled tuition and takes longer, but where the latter is not feasible and the patient and teacher will throw themselves earnestly into the work very good results are in time obtained.

After these exercises have gone on for some time improvement in the stutter is nearly always seen and it may disappear. If it does not go when the respiration and vocalisation have been corrected special attention must be paid to overcoming the difficulty. The patient must be made to grasp the idea that it is the laryngeal action which is behindhand and that he must make increased effort to produce voice. If the consonant which gives difficulty is a "voiceless" one, as P (see physiological alphabet *supra*), he must try to get out the succeeding vowel and he will find it quite easy to add the consonant. If the consonant be a "voiced" one, as B, he must be shown that it contains a definite vocal element and he must learn to throw his energy into getting this out instead of the labial element. If there are any associated gestures he should do his reading practice in front of a mirror. Finally, it has to be impressed on the boy and his relatives that the improved method of using his voice must become habitual by long practice and that this practice must not be limited to his times of instruction but that he must carry it on in ordinary conversation. Given time, great perseverance, and an average amount of intelligence the majority of stutterers under 14 years of age may look forward with confidence to conquering their distressful disability.

MUNIFICENT BEQUEST FOR THE PREVENTION OF CONSUMPTION.—Mr. Georges Montefiore-Levi of Brussels, formerly a member of the Belgian Senate and president of the Association of Engineers, who founded and endowed among other institutions the Liége Electrical Institute and the Liége Government sanatorium, has left specific bequests to Jewish and general charities on the continent to the value of over £35,000. A portion of his residuary estate, probably exceeding £100,000 in value, is to be applied for the prevention of consumption.

# MICROBIC CYANOSIS.

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THE conception of blood destruction produced by toxic processes having their origin within the intestines has been steadily growing within recent years. Such an idea forms the basis, as is well known, of certain theories widely held in regard to the causation of anæmia, both primary and secondary. Into the subject of anæmia we do not intend at present to enter but some questions connected with blood changes caused by microbic activity have forced themselves upon our attention during observations upon a most interesting case and we desire to make the results of our inquiries known. It will undoubtedly be easier to render the subject clear if we in the first place briefly summarise the clinical features of the case and afterwards describe the facts elicited by chemical and bacteriological investigation. The information thus obtained will allow us to compare the different symptoms presented by the patient with those described by recent observers in the Netherlands, to whom we owe all we know on the subject, and we shall then be in a position to state our conclusions definitely.

A married lady, aged 36 years, had suffered for some years from weakness and headaches and these symptoms were frequently associated with attacks of giddiness and faintness. But the most obvious symptom was a considerable change in the complexion. The patient had blue eyes and golden hair, formerly associated with a ruddy complexion, but during the last two or three years the tint of the skin had assumed a distinctly cyanotic appearance. The face and hands were of a lavender hue, while the lips, ears, and nails were almost as dark as bilberries. For some time there had been a considerable tendency to diarrhœa and this was frequently accompanied by general gastric as well as enteric disturbance. Dr. W. F. Somerville, under whose care the patient had been for some years, requested Dr. Douglas in May, 1905, to make a general examination of the blood and urine. The hæmoglobin then amounted to 70 per cent., the erythrocytes numbered 3,360,000, the colour index, therefore, was practically 1; the leucocytes were 10,296 in number and stained films showed poikilocytosis in a slight degree with one possible normoblast. The blood was otherwise normal and thus presented the features of a secondary anæmia. The amount of the urine was 1750 cubic centimetres (61 ounces) in 24 hours. It was pale, acid, and of low specific gravity (1003), and contained faint traces of albumin and pus, but no other abnormal constituents. The amount of creatinin was diminished and the urea only reached 1 per cent., or 17·5 grammes (269·5 grains) per day. The microscope showed a few pus corpuscles, some uric acid crystals, and one or two hyaline casts. In September, 1905, Dr. Somerville requested Dr. Gibson to see his patient along with him and the general facts which have been stated were confirmed. At that time the complexion was as has already been described. It was observed that there was no clubbing of the fingers; the vessels were healthy; the arterial pressure was moderate; while the rate and rhythm of the pulse were within normal limits. The heart was not enlarged and the only abnormality was faintness of the sounds with a slight systolic murmur near the pulmonary area. There was no change in the condition of the lungs; the liver and spleen were of ordinary size; and with the exception of headache and depression the nervous system showed no implication. The condition of the blood and the urine was as when the patient was seen in May by Dr. Douglas. On careful investigation of all the symptoms Dr. Gibson suggested that it was possible the patient might be suffering from blood destruction as the result of using aniline derivatives, which she had undoubtedly employed with great freedom for the headache that had for long been such a prominent and persistent symptom. The presence of methæmoglobin in the blood as the result of poisoning with aniline substances has been recognised since Rayner[1] first described it. It has also been

[1] Brit. Med. Jour., 1886, vol. i., p. 294.

thoroughly investigated by Müller[2] and Brown.[3] It was arranged between Dr. Somerville and Dr. Gibson that the patient should, if possible, abstain from the use of the synthetic drugs for some time and that a consultation should be held at a later period with the view of discovering whether any improvement had taken place. During the winter and spring the patient remained in Glasgow under the care of Dr. Somerville; she only took comparatively small doses of phenacetin and used every means which seemed likely to improve the general condition. In May of the present year she was again seen by Dr. Gibson and the blood was again carefully examined. It showed 48 per cent. of hæmoglobin and 3,200,000 erythrocytes, the colour index being therefore 0·75. The number of white corpuscles was on this occasion 7400. Stained films showed a greater degree of poikilocytosis than formerly, but the cells stained well and no nucleated red corpuscles could be detected. There was no departure from the normal relation on making a differential count of the whites, the polynuclear neutrophiles numbering 65, the small lymphocytes 28, and the large 5, while the eosinophiles were 2 per cent. The peculiar grey tint of the face and hands was as deep as formerly, while the blackish-blue colour of the lips, ears, and nails was quite as intense as it had been. It occurred to Dr. Gibson that the cyanosis was probably due to the presence of methæmoglobin and he suspected that this might be due to intestinal changes. This condition has been described by Stokvis,[4] Talma,[5] and Hijmans van den Bergh.[6] The investigations of these three observers have lately brought before us a condition which had not been previously described as the result of changes in the hæmoglobin through toxins having their origin in the intestines, whence they are absorbed into the blood. The original case described by Stokvis was characterised by fœtid diarrhœa. The patient had drumstick fingers but no œdema. No change could be determined in the heart, lungs, liver, or spleen, and only towards the end of life was there some albuminuria with tube-casts. Stokvis believed the cause of the cyanotic appearance to lie in the presence of methæmoglobin but no attempt was made to find out the mode of production of the blood changes. After death it was found that the patient had suffered from ulcerative enteritis and subsequent subacute parenchymatous nephritis. Talma described three cases of what he termed intra-corpuscular methæmoglobinæmia. In all of these cases the circulatory organs were practically normal, but the blood contained methæmoglobin, described as present in the corpuscles and not free in the plasma. No hæmoglobinuria was present in any of the three cases, but all showed the presence of much indol in the renal secretion. In all of them the condition of the intestinal tract was obviously the origin of the principal symptom. Hijmans van den Bergh has described four cases of sulphhæmoglobinæmia with profound cyanotic appearances taking their origin in serious intestinal changes. He has further narrated the cases of three patients suffering from enterogenous methæmoglobinæmia, and in this connexion has taken advantage of the observations of Steensma[7] upon the presence of nitrites. He found in these the connecting link between the intestinal troubles and the resulting blood changes. The investigations of Hijmans van den Bergh, assisted by Mejuvrow Grutterink, were of the most exhaustive character and merit careful study.

In consequence of his suspicions regarding the nature of the case Dr. Gibson recommended that Dr. Somerville should again call in the assistance of Dr. Douglas with a view to the spectroscopic examination of the blood and the bacteriological examination both of the blood and of the secretions. This was accordingly done. Blood taken from the ear was examined both with the direct vision spectroscope and the large table instrument. It gave the characteristic spectrum of methæmoglobin in dilute solution—the narrow band in the red between the C and D lines as well as the ordinary bands of oxyhæmoglobin at D and E. The spectrum agreed with that of artificially prepared methæmoglobin obtained by treating normal blood with aqueous solution of ferrocyanide of potassium, but the red line was much fainter in the genuine specimen. It may be mentioned that at the time of examination the patient was less cyanosed in appearance than she often was. On the following day the urine was carefully examined. It contained nothing abnormal except a slight increase of the normal urobilin as determined by Schlesinger's test (treating the urine with an equal volume of 10 per cent. solution of zinc acetate in absolute alcohol and filtering, with development of green fluorescence).

Being very anxious to make some further observations Dr. Somerville and Dr. Douglas induced the patient (who was very nervous about these manipulations) to let the latter draw some more blood. She was not so well on this occasion and the face showed a very characteristic grey tint, while the lips were a dark grey-blue. Dr. Douglas endeavoured in the first place to get a direct spectroscopic picture of the blood while still in the vessels, as the Rotterdam observers had done, but was unsuccessful, due chiefly to want of assistance and the absence of a good lamp. When the ear was incised it was noted that the blood was extremely dark in hue. Several specimens were received into test-tubes and on the addition of water yielded a crimson solution—not a red solution as normal blood does. In concentrated solution a very marked spectrum of methæmoglobin was obtained, the red band being beautifully distinct, while the whole of the right-hand end of the spectrum was absorbed up to the orange line. In more dilute solution the red line was fainter though quite distinct and the two ordinary bands of oxyhæmoglobin appeared. On the addition of ammonium sulphide the characteristic phenomena of the methæmoglobin spectrum were perceived—that is, the red band disappeared promptly, leaving the bands of oxyhæmoglobin at D and E, while these merged more slowly into the broad ill-defined band of reduced hæmoglobin.

To ascertain the presence or absence of nitrites in the blood of the patient 100 cubic millimetres were diluted with 20 times their volume (two cubic centimetres) of nitrite-free water. In this, as in all other instances, the test employed for nitrites was the extremely delicate one which consists in adding one cubic centimetre each of a solution of sulphanilic acid and of naphthylamine in acetic acid to the liquid to be tested, when, after the lapse of a longer or shorter time, the most minute trace of nitrous acid is indicated by the development of a fine pink colour. As little as $\frac{1}{10}$ milligramme ($\frac{1}{1700}$ grain) of nitrous acid can be thus detected, the test being much more sensitive than the iodide one. The blood, thus diluted 20-fold, measured a trifle over two cubic centimetres and to it were added five cubic centimetres of absolute alcohol (nitrite free) dropped in slowly from a pipette while the mixture was constantly stirred. A dull brown colour developed and the tube was closed and allowed to stand 12 hours. The proteids of the serum had now sunk as a light-brown precipitate carrying down the pigments and leaving an almost colourless opalescent supernatant layer. The latter was pipetted off and thoroughly centrifugalised, when a still clearer layer of fluid was obtained. This was again removed by pipette and treated with the sulphanilic acid and naphthylamine reagent when a delicate pink developed, indicating the existence of nitrites. This was repeated with a second positive result. At the same time that the blood was taken some of the patient's saliva was obtained. This also gave a distinct reaction for nitrites. Presumably normal saliva, tested at the same time, gave a slight reaction but that in the case of the patient was much more marked, a fine rosy-pink tint developing. The saliva also responded to the zinc-iodide-starch test for nitrites.

Dr. Douglas considered it important to examine the fæces in this case as there had been a long history of intractable looseness of the bowels. Accordingly an ample supply was sent to the laboratory and was found to be semi-liquid in consistency, a dirty greenish-brown in colour, and extremely offensive, though by no means rich in sulphuretted hydrogen. The reaction was clearly acid. An extract made with normal saline solution showed a very slight nitrite reaction and this extract examined by the spectroscope revealed no trace of methæmoglobin. Fresh ox blood was mixed with saline extract of the fæces and kept both at room temperature and in the incubator at 37° C. to see whether any methæmoglobin could be produced. The results were negative on every occasion. The fæces were then extracted with ether containing strong acetic acid to remove any blood pigments in the form of hæmatin (Weber's test), but no evidence of blood could be obtained. Microscopically the fæces showed a very large number of bacteria and much fine débris but no blood.

[2] Deutsche Medizinische Wochenschrift, 1887, Band xiii., S. 28.
[3] American Journal of the Medical Sciences, 1901, vol. cxxii., p. 770.
[4] Nederlandsch Tijdschrift voor Geneeskunde, 1902, II. Deel, S. 678.
[5] Ibid, 1902, II. Deel, S. 721.
[6] Deutsches Archiv für Klinische Medicin, 1905, S. 86, and Berliner Klinische Wochenschrift, 1906, S 7.
[7] Nederlandsch Tijdschrift voor Geneeskunde, 1904, II. Deel, S. 425.

The facts arrived at so far indicated that methæmoglobin was very distinctly present in the blood but absent from the motions, that nitrites were present in the blood and saliva but existed only in traces in the fæces, and that the latter possessed no power of converting normal ox blood into methæmoglobin. This seemed to point to a hæmatogenous formation of the nitrites and this raised the question as to whether the source of the latter might not be bacterial activity within the blood itself. Accordingly two loopfuls of diluted blood were inoculated into ordinary nutrient agar, plated, and incubated at 37° C. for 24 hours. At the end of this time the plate showed a number of discrete bluish-white colonies, each from one to two millimetres in diameter. Inoculations of these into various culture media yielded the following results: (1) agar slope: a thick, whitish-grey, moist streak; (2) broth: a general turbidity, settling down to a whitish deposit; (3) potato: a slight brown growth; (4) glucose-agar: gas and acid production; (5) lactose-agar: gas production; (6) neutral red-agar: development of fluorescence; (7) gelatine-stab: the tube medium unfortunately liquefied entirely owing to the very warm weather; (8) milk: marked curdling; and (9) indol reaction: attention here was directed to the point as to whether the organism had produced nitrites as well as indol in peptone water, as the cholera vibrio does. The addition of sulphuric acid alone, however, gave rise to no formation of indol red but the subsequent addition of a trace of nitrite of sodium permitted of the formation of a red tint.

Microscopically the organism was a short, stout rod, staining with the ordinary basic dyes; it was Gram-negative. Motility in hanging drop preparations was marked.

From these investigations it is clear that this organism was either the bacillus coli communis or some very closely allied organism of the colon group which was obtained in pure culture from the blood. It was apparently without the power of producing nitrites *in vitro* in peptone water but it is impossible to say what the result of its chemical activity within the blood might be. It seems to us very desirable that these observations should not be taken as final and if opportunity presents itself they will be repeated, especially those of a bacteriological nature. But a provisional reading of the case seems to be this: that the original source of mischief lies in the bowel, that a systemic infection has taken place, that nitrites are being constantly produced in the body in varying amounts (thus possibly explaining the varying degrees of cyanosis), and finally, that nitrites acting on the hæmoglobin constantly keep a varying amount of it in a state of methæmoglobin—a condition in which oxygen is very firmly united to the hæmoglobin molecule and will not separate from it for the needs of the body cells. We need hardly add that the condition belongs to the group of affections often termed false cyanosis.

We are as yet unable to venture on any positive statements as regards the therapeutic aspect of this affection. Dr. Somerville has arranged for a course of intestinal antisepsis, combined with the employment of abundant diluents, at one of the home spas for his patient, and we may probably be in a position before long to recur to the subject with information on this point. But it has seemed advisable to us to make our observations and investigations public in order to arouse interest in a condition which is so far but little known.

## THE TREATMENT OF SURGICAL TUBERCULOSIS.[1]

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THAT surgery is a progressive art we have amply demonstrated to us by the frequent publication of papers setting forth either some entirely new method of treatment or some improvement in technique in the performance of an old-established operation. It is perhaps only natural that the rate of progress should be often measured by the degree of novelty of the method introduced and I do not think there are many of us who, if suddenly asked to give instances of recent surgical progress, would not immediately quote the advances that have been made of late years in the surgery of the stomach and of the prostate gland. Such brilliant examples as these are liable, however, to overshadow the steady but less obtrusive improvement that has taken place in the treatment of many other surgical conditions and I do not think I could choose a better example of this than the treatment of surgical tuberculosis. By the term "surgical tuberculosis" I mean the involvement by tubercle of such organs as the bones, the joints, the lymphatic glands, the skin, the genito-urinary system, the peritoneum, and certain abdominal and pelvic viscera, the treatment of all of which usually falls within the province of the surgeon. During the last few years there has taken place in the treatment of these conditions a steady but marked improvement, of the full extent of which we are often only made conscious by such interchange of views as I trust will take place in the discussion following this paper. A progress so gradual, as this has been, only slowly finds its way in its entirety into the current text-books of surgery, and one often finds in the same text-book strange contradictions in the application of certain principles of treatment to the same disease in different organs, accordingly as the writer's experience has drawn his attention to one or other part of the body. This must be my apology for bringing before you this afternoon such an apparently commonplace subject.

The operative treatment of cases of surgical tuberculosis during the last 15 or 20 years can be roughly divided into three periods. The first was dominated by the belief in the efficacy of incision and drainage combined with general improvement in hygiene. This was followed by an attempt to remove, or partially to remove, usually by scraping, the original focus of disease, and this naturally led to the second period, when tubercle was regarded by many surgeons as almost a malignant disease, and, where practical, the entire removal of the diseased area was insisted upon, however extensive and deforming the necessary operation might be. During this period general constitutional measures were also advocated, but, with the surgeon's attention so concentrated on the extermination of the local disease, the constitutional measures often resolved themselves into a mere pious expression of opinion, with little attention to practical detail. The reason for this is not far to seek when we reflect that the only circumstances in which extensive operations can be performed are not as a rule associated with those surroundings which we consider essential to the constitutional treatment of tuberculosis. To this particular point I wish to refer later. From the mass of experience gained during these two periods, assisted by certain recent brilliant clinical and pathological advances, there have emerged certain principles of treatment which, I believe, place us nearer to a position to control the advances of this disease than we have ever hitherto been and enable us to foretell with some tolerable accuracy the lines along which future developments of treatment will tend. I can best illustrate my meaning by giving a few examples and these are most conveniently taken from cases of bone, joint, and gland tuberculosis.

In the first period mentioned above the usual treatment for psoas or iliac abscess arising from tuberculous disease of the bodies of the lumbar vertebræ was incision and drainage. Possibly at the time of the operation every precaution against sepsis was taken, but in the subsequent daily dressings, often extending over many months, these precautions were inevitably slackened, with the almost certain result of secondary infection of the abscess cavity. The symptoms of the resulting septicæmia, whether chronic or acute, were usually ascribed to an increase in activity of the tuberculous process and further efforts were made to remove the original focus of the disease, and also to scrape away the granulation tissue lining the interior of the abscess wall, to which almost malignant properties were ascribed. Similarly, in a case of joint disease the joint was opened, any obvious tuberculous sequestra were removed, the surface was scraped, and a drainage-tube was inserted. Glands in the neck also were incised, scraped, and drained, and any recurrence was ascribed to the malignant variety of the tubercle with which the patient was infected. That the gross results were not worse than they were was largely due to the fact that, owing to the simplicity of the operative measures required, many of the cases were undertaken in the country, in cottage

[1] A paper read before the Midlands Branch of the British Medical Association at Derby on March 30th, 1906.

hospitals, or in circumstances where the after-treatment of the case could be practically conducted on lines similar to our modern open-air treatment of pulmonary tuberculosis. In such cases, even in spite of a certain amount of sepsis, the results were on the whole fairly good; but that in the hospitals of our big cities the results were deplorable I am sure all those who were students in the "eighties" and early "nineties" will agree. Such cases when I was a student often occupied beds in the hospitals for periods of six months, or even longer, requiring dressing once or twice a day, owing to the quantity of discharge. The condition of such patients was, indeed, miserable and they were a serious source of danger to other patients in a surgical ward. Almost invariably the end came from hectic fever, exhaustion, lardaceous disease, or generalised tubercle; all expressions, as I hope to show later, of the same process—namely, sepsis, whether acute or chronic.

Results such as these led surgeons to endeavour to eradicate the disease by earlier and more extensive operations. Consequently, joints and glands were excised as widely of the disease as possible and without much regard to the consequent deformity. Foci of tubercle only partially accessible, as in spinal caries, were attacked with various chemicals, such as carbolic acid, chloride of zinc, sulphur, or iodoform, and the surgeon's prime object was eradication of the local seat of the disease. Elaborate precautions were taken against sepsis, but owing to the extent of the operation or to the irritating nature of the chemicals employed, drainage was necessary in the majority of cases and drainage is always a weak spot in our armour of asepsis. Certainly the results were better during this period in respect of asepsis but assuredly many unnecessary excisions were performed, both of glands and joints. I need scarcely labour the importance of the latter class of operations at least. Owing to the fact that such extensive operations were required, more of these cases were brought to the hospitals of our large cities and in consequence there were fewer facilities given during the immediate after-treatment for fresh air and sunshine. Efforts were certainly made to provide these essentials at convalescent homes, but because they were convalescent homes patients could not be taken into them in any numbers so long as skilled surgical attention and nursing were required. Consequently, these patients had to spend a considerable time in the wards of a large hospital while they recovered from some serious operative procedure, lying side by side to be nursed with patients on whom extensive operations had been performed for the removal of cancerous organs or for the relief of some acute abdominal disease. Although the importance of the constitutional treatment was realised in theory in practice it was neglected owing to the concentration of the surgeon's attention on the local condition.

There is nothing that is dramatically novel in the modern treatment of surgical tuberculosis. It merely consists in the practical application of certain principles, of the importance of which we have long been vaguely conscious, but which have been lately brought into prominence by the crusade against pulmonary tuberculosis and have been put on a scientific basis by the work of my colleague at St. Mary's Hospital, Sir A. E. Wright. Stated broadly, these principles are that the prognosis of any case of local tuberculous invasion depends not so much on the virulence of the particular organism introduced as upon the power of the individual attacked to manufacture certain protective substances and, further, upon the facilities for bringing these protective substances into the area involved.

Of late years Professor Metchnikoff's theory of the destruction of invading micro-organisms by the process of phagocytosis had been gradually giving way to the theory that it was to the fluids of the body that we had to look for bactericidal properties which were ascribed to certain substances termed bacteriolysins, &c. The theory of phagocytosis has, however, lately received considerable support owing to the discovery by Wright and Douglas of certain substances, in normal blood serum, which are capable of rendering bacteria susceptible of being absorbed by leucocytes. To these substances Wright and Douglas have given the name of opsonins. I need not detail the experiments by which these observers have arrived at these results, as their work is now well established and has been corroborated by other eminent pathologists. We have merely here to do with the practical application of the principles which they have laid down.

In addition to the discovery of the presence of these opsonins Wright and Douglas have also devised a technique by which the opsonic value of an individual serum can be measured. This value they have termed "the opsonic index," and it is the result obtained by dividing the number of bacteria taken up per leucocyte, in the presence of the given serum, by the number taken up per leucocyte, in the presence of the serum of a normal individual, or, better still, of a number of individuals. The importance of this opsonic index in dealing with cases of chronic tuberculosis it is difficult to over-estimate. It gives us an accurate measure of the patient's capabilities of resistance to the disease and also enables us to measure the efficacy and progress of certain methods of treatment. For instance, it is shown that the opsonic value of the serum is increased specifically by the injection of minute doses of dead bacteria—e.g., $\frac{1}{10^{1}0}$th of a milligramme of Koch's new tuberculin. The rise in the opsonic content of the blood, so obtained, is, however, preceded by a marked fall, and to this fall Wright has given the name of "the negative phase." Should the dosage of the tuberculin be excessive or the inoculations be repeated at improper intervals of time, a persistent negative phase may be obtained and the patient's condition may be rendered less favourable. This fact has, no doubt, accounted for many of the disappointing results that have hitherto followed the use of tuberculin and which have led many surgeons to abandon its use. In a similar way the patient may be auto-inoculated from his own lesion.

In surgical tuberculosis the infection may be either subacute or chronic; the infected area may be easily accessible to the circulating fluids or may be so circumscribed as to be practically outside the body. On these points depends the amount of auto-inoculation that occurs. This may be excessive, leading to a persistent negative phase, or it may be too little, leading to an insufficient manufacture of protective substances, and to the consequent persistence of the lesion. These points can only be ascertained by taking a series of observations of the opsonic index and by the construction of a definite opsonic curve. The information so obtained is of the highest value in determining the treatment to be adopted. For instance, where auto-inoculation is in excess the inoculation of tuberculin would be contra-indicated, absolute rest would be employed to keep the circulation quiet in the infected area, and the surgeon would have to determine whether the local conditions were sufficiently urgent to warrant his operating during the negative phase or whether he could wait while the resistance of the individual was increased by other measures. On the other hand, when the auto-inoculation was small in amount the protective substances could be raised by artificial inoculation and measures could be taken to bring more blood to the diseased part; while the surgeon would operate with a knowledge that any escape into the circulation of toxic material from the infected area during his manipulations would not tend to depress still further the resistance of the individual but would, on the contrary, act in the same manner as therapeutic inoculation and raise the opsonic index.

If the pus of a tuberculous abscess be centrifugalised the fluid part will be found to be practically devoid of opsonins, although the circulating blood may contain a quantity of opsonins which is normal, or very little below. The presence of this inert fluid has probably by its mechanical pressure prevented the flow of lymph through the abscess wall and its immediate neighbourhood. With its disappearance the parts have been flushed with lymph charged with bactericidal substances. Here we have the explanation of many clinical facts which before were inexplicable. Many years ago it was noted that patients who were the subjects of tuberculous peritonitis recovered after merely an exploratory laparotomy, during which the fluid contained in the peritoneal sac was allowed to escape, and cases were reported of recovery after paracentesis abdominis only. Every surgeon probably has records of cases of tuberculous peritonitis in which the happiest results have followed mere incision and lavage of the abdominal cavity. Two such cases I have seen or heard of lately in which I had operated upon the patients in 1904.

One of the patients, a boy, aged 13 years, was brought into St. Mary's Hospital on August 11th, 1904, with abdominal pain and distension. According to the history given the condition had only been present for four days and he had been walking about up to the time of his admission. The amount of fluid in the abdomen, and the absence of any serious symptoms of acute abdominal disease, suggested the possibility of tuberculous peritonitis, and this proved to be the case when the abdomen was opened. The peritoneal

cavity contained a quantity of yellowish fluid in which were floating flakes of soft lymph; the parietal peritoneum, the omentum, and the surface of the viscera were studded with numerous tubercles, of sizes varying from that of a pin's head to that of a grain of sago. The abdomen was well flushed out with sterile saline solution and was carefully stitched up in layers. The boy left the hospital in three weeks' time in apparently good health. I saw him the other day, over 18 months after the operation, and found him to be a well-developed, sturdy boy, looking considerably over 15 years of age and well over 10 stones in weight. He had not had any sign or symptom of a return of the condition for which he came into hospital and would now be regarded as a well-grown and vigorous youth.

The other patient was a youth, aged 17 years, who was admitted to hospital on August 29th, 1904. He had been taken ill 14 days before admission and he presented similar symptoms and appearances to those which were present in the last case. The peritoneum also contained a quantity of fluid, with flakes of lymph, while the whole peritoneal surface was practically lined by innumerable tubercles. The fluid was allowed to escape and the abdominal cavity was washed out. The patient left the hospital and I had not heard of him until the other day when, in response to a letter from me, he wrote to the effect that he had never had any return of the condition for which he came to hospital, that he was in good health, and had been able to follow his occupation. (In this case Sir A. E. Wright made an examination of the patient's blood and peritoneal fluid with the following results: patient's blood = 25·4 bacteria per cell; patient's peritoneal fluid = 4·6 per cell; A. E. W.'s blood, 17·0 per cell; the opsonic index of patient's blood = 1·5; peritoneal fluid = six times less.)

I do not intend to weary you this afternoon with a long recital of cases but I have mentioned these two to demonstrate the fact that a very extensive invasion of tubercle can be cured merely by the liberation under aseptic conditions of the inert material which had gradually accumulated without the employment of any chemicals or drainage, reliance being placed only on the flushing of the infected area by the normal fluids of the body charged with their protective substances.

The question now arises whether the individual's resistance cannot be raised, apart from any question of inoculation, whether by natural or artificial processes. Of this there can be no question. The efficacy of fresh air and sunshine in the treatment of tubercle has always been realised but it is only of late years that their full benefits have been obtained and that the open-air treatment for tubercle has been carried out on properly organised lines and with a full appreciation of the importance of detail. There is not time for me to go into the whole question of the open-air treatment, except to comment on the fact that with all these new sanatoriums springing up around us for the open air treatment of pulmonary tuberculosis no adequate provision is being made for the open-air treatment of surgical tuberculosis. This is the more extraordinary when we reflect that this country at the end of the eighteenth century was the first to realise the importance of fresh air in the treatment of these affections and opened the Royal Sea-bathing Infirmary at Margate for the treatment of scrofula. Probably the treatment at Margate was not the "open-air treatment" in the modern acceptance of the term but it was a marked advance in the right direction and the hospital has attained a deservedly high reputation for the treatment of surgical tuberculous affections. Since then numerous hospitals have been built on the continent for the treatment of surgical tuberculosis in children where operative measures can be carried out side by side with properly organised open-air treatment. During the last few years a great impetus has been given to this form of treatment in America and in the American medical journals of the last few years are constant allusions to the opening of new open-air hospitals for the treatment of surgical tuberculosis in children. I need only mention two—namely, the Seaside Hospital at Coney Island, New York, and a small hospital that was opened in December, 1904, on the Wellesley Hills, eight miles out of Boston. In these establishments the children live in open verandahs or in wooden buildings termed "shacks," which are so constructed with sliding doors that half of each side of the building can be open to the air at the same time. These doors are only closed for short periods in order that surgical dressings and other nursing details can be carried out and the children practically lie day and night in the open air. At night use is made of flannel sleeping bags with woollen gloves and hoods, but it is stated how little the patients appear to regard the cold of even a rigorous New England winter. The results at these and other open-air hospitals have been most encouraging. Patients have improved in weight and colour, sinuses have closed, and enlarged glands have subsided. Perhaps the one fact that stands out even more saliently than others is that it is not so much a question of climate or of any special location as of pure air and sunshine. This is an important point to emphasise, as in the large proportion of cases suffering from surgical tubercle the question of expense prohibits the search after what is considered a suitable climate, and if climate is considered the important element in cure most patients would easily become discouraged. The only exception which I would make is the smoke-charged atmosphere of big cities, but even in most unpromising surroundings efforts have lately been made at some of our children's hospitals to utilise their roofs as what the Americans term "sun parlours." Probably the clearer atmosphere of New York city is more suitable for such therapeutic measures than our more murky surroundings in London, and in the *New York Medical Journal* of Feb. 24th of this year there is an interesting account of the marked improvement that has taken place in two bad cases of caries of the spine, with sinuses, in which the patients have been treated on the roof of the New York Orthopædic Hospital. These two patients—boys, aged respectively 11 and four years—who had been steadily growing worse, with hectic temperature, constant pain, poor appetite, and loss of flesh, were placed on the roof in November, 1905, only being brought to the ward for dressing and nursing purposes. We have all seen such cases, and I only mention them here to show what can be done even in such unpromising environment as the surroundings of a city hospital. In most of our big towns, however, and certainly in London, I do not think that it is practicable to organise this open-air treatment on any extensive scale in the midst of the town itself. What is required is that at a convenient distance in the country (for it is not necessary to go to the sea) small hospitals should be built with facilities for open-air treatment. Such hospitals should be considered extensions or adjuncts of our big city hospitals, and to them cases of surgical tuberculosis should be transferred from the latter. Each hospital should be properly equipped for the performance of major surgical operations and these should be undertaken by the staff of the mother hospital. I consider this an important element in the scheme, as it is essential that such operations should be performed by those whose routine work leads them to the performance of major operations in all parts of the body and gives them facilities of manipulation and a skill in technique which could not perhaps be attained by anyone whose operative work was limited to these particular cases. I should not anticipate any difficulty in staffing these hospitals from among the members of the honorary staff of our metropolitan and provincial hospitals. Facilities of suburban transport and telephonic communication have enormously increased during the last few years; the operations would rarely be "urgencies," and could be performed on regular visiting days, and the visits would be distributed among the surgical staff of the general hospital, two or three doing duty for certain periods of time, so that no undue amount of work would devolve on any individual. Resident house surgeons would be responsible for the care of the cases in the absence of the honorary staff and on them also would devolve the routine blood examination and therapeutic inoculations under the guidance of the pathological department of the hospital.

I have only faintly outlined a scheme the details of which would no doubt vary in different localities, but I think it is of prime importance that such hospitals should be organised in conjunction with, and not independently of, our big general hospitals, and unless the managers of the latter take the initiative I am afraid that small independent hospitals will be multiplied, with the result of yet more examples of that waste of effort and overlapping which are so characteristic of charitable enterprise in this country. That such institutions will spring up in the next few years I feel confident, and now is the opportunity to secure some order in their organisation.

I have dwelt at some length on the importance of open air in the treatment of these cases and with this goes free access to sunlight. I do not wish to raise the whole question of light therapy which at present we scarcely understand.

The efficacy of sunlight in the treatment of all chronic infections has been realised from time immemorial, and lately the use of the Finsen light has brought the whole subject into prominence. Dr. Bulloch suggests that its efficacy depends upon its power of determining a flow of blood or lymph to the infected area in a manner that cannot be imitated by any other therapeutic agency and that the area in question is thus flushed with lymph carrying with it protective substances. Light therapy certainly appears to give the best results in those extremely chronic infections which would appear to be almost completely shut off from the general circulation of body fluids as judged by the absence of any general dissemination. The best example of such a condition is found in lupus, and it is to these cases that light therapy is peculiarly applicable.

Another therapeutic measure, of which, perhaps, insufficient use is made in the treatment of surgical tuberculosis, is massage, either general or local. General massage increases the circulation of tissue fluids and would be indicated in cases where a low opsonic index, with absence of pain and of rise of temperature, indicated a small amount of auto-inoculation. In addition, massage raises the muscular tone and improves the appetite.

The question of local massage is a more difficult one and the measure has a far more limited application. We have all seen glands in the neck breaking down under a vigorous course of massage at the hands of a mother or nurse and some of us have seen tuberculous joints red, swollen, and exquisitely tender as the result of a course of massage and movements prescribed under a misapprehension of the nature of the case. But has it ever occurred to us that, considering how common such methods of treatment are, these untoward results are comparatively rare and that we often meet with patients of whom it is said that they recovered in spite of such treatment? Local massage should be prescribed with the greatest caution, but I believe that in properly selected cases it has a definite therapeutic use. The chart which I now send round was prepared by Mr. J. Freeman, working

Tuberculous knee: massage and injection.

in Sir A. E. Wright's laboratory, from observations on a patient of mine, and it will form part of a paper which Mr. Freeman will shortly publish on this particular subject.

The patient was a small boy with a definitely tuberculous knee-joint. The case was a chronic one, with swelling, only slight pain, and some flexion. He was kept in bed with a weight extension apparatus on the limb to overcome the flexion. The pain and flexion soon disappeared and an examination of his blood showed that his opsonic index was normal. On Dec. 5th, 1905, gentle massage was applied to the joint. The boy did not complain of pain and a few hours afterwards his opsonic index had risen to 1·3 and on the next day to 1·5. A few days later it was again normal. The experiment was repeated some three weeks later, when his index was below normal and it again rose to 1·3, falling again to below normal. Later, an injection of $\frac{1}{1000}$th milligramme of tuberculin was given and was followed by the usual negative and positive phases, the latter being maintained for some days.

This is only one case, but Mr. Freeman has other evidence that careful manipulations in such cases have very much the same results as a therapeutic inoculation. It is obvious, however, that the result of such measures should be carefully watched, as it would be comparatively easy to give an overdose or to superimpose one negative phase on another.

Even if local massage were never accepted as a therapeutic measure in the treatment of arthritic or glandular tubercle such a case as the one I have just quoted should make us ask ourselves the question whether the absolute fixity of the joint is indicated in every case of tuberculous arthritis or whether the lymph circulation could not be accelerated by carefully graduated movements. On the other hand, it cannot be emphasised too strongly that in cases where there is evidence of considerable auto-inoculation, with an opsonic curve marked by variations of some magnitude, not only should the limb be rigidly fixed but the patient should be kept lying down, and the circulation rendered as quiescent as possible. I believe this to be merely a scientific explanation of a well-established clinical observation.

The question of feeding is an important one, the essentials being a plentiful supply of easily assimilable food and the absence of any fresh infecting material. For this reason the milk-supply should be above suspicion and the dietary should contain a sufficiency of animal fats in an appetising and easily digestible form. Cod-liver oil is invaluable in these cases and is usually prescribed with iron or maltine, accordingly as there is difficulty or not in persuading the patient to take the oil, the latter combination being the more palatable.

I now pass on to the consideration of the operative measures available in these cases. The tendency of late years has certainly been towards conservatism, and we hear of fewer cases of excisions of joints, although there are still able advocates of the extirpation of tuberculous glands, on lines similar to those employed in the removal of glands secondary to cancer. In the circumstances at present existent in our large London hospitals there is much to be said in favour of such drastic treatment, but under more favourable surroundings more limited operations would be, and are, found sufficient.

The chief consideration in these operative procedures is the prevention of sepsis, and this becomes all the more important when we realise that asepsis is difficult of attainment in these cases. Healthy tissues are capable of dealing with a slight amount of contamination but tissues already the seat of microbic invasion are less resistant. It is difficult to lay sufficient stress on the effect of a secondary infection in a case of tuberculosis. Apart from the dangers peculiar to sepsis itself the secondary infection has a markedly unfavourable influence on the course of the original tuberculous process. This has long been a matter of clinical observation but was more scientifically demonstrated in 1904 by M. Petroff working in the Institut Pasteur.[2] This observer found that closed foci of surgical tuberculosis, which had not yet been subjected to surgical intervention and were covered by sound skin, were not, as a rule, associated with any aerobic or anaerobic organism other than tubercle, and this rule obtained even in those cases which presented signs of acute inflammation. (In 57 cases examined 49 did not give any development of germs, and seven of these showed acute symptoms. In the eight cases which gave positive results there were possibilities of infection owing to adjacent sinuses, excoriations of skin, &c.) Further, he found that open foci of surgical tuberculosis always contained associated microbes which were for the most part pyogenic cocci of feeble virulence. (In 44 cases examined 41 gave cultures of various organisms, 23 of staphylococcus—16 white and seven gold—18 of streptococcus, four of bacillus pyocyaneus, two of micrococcus tetragenes, and one of bacillus coli.) M. Petroff further inoculated pure cultures of tubercle and of tubercle mixed with other organisms into the two knees of a series of rabbits. In all cases where the secondary infection had a sufficiently long duration the examination of the parts showed more granulations and more destruction of the articular surfaces in the secondarily infected joints than in those infected with pure tubercle. In the former the epiphyses and bone were attacked but in the latter only the synovial membrane and ligaments. In another series of rabbits he demonstrated that the dissemination of the tubercle was markedly accelerated by secondary infection. This is partly accounted for by a weakening of the infected individual's resistance and partly due to changes produced in the local tuberculous process. The latter is a slow process and allows the host to wall off the invaded area with a barrier of granulations and this barrier may be broken down by an acute and destructive inflammation. The dissemination

[2] Annales de l'Institut Pasteur, 1904, vol. xviii., p. 502.

took place by the blood stream, showing itself first in the lungs. This is in accordance with our clinical experience that tubercle of joints does not cause enlargement of the lymphatic glands, but that dissemination, in the event of its occurrence, is shown by the onset of tuberculous meningitis or of general miliary tuberculosis. This experimental evidence explains the well-established clinical fact of the greater malignancy of open forms of tubercle as against closed.

Our chief aim therefore in dealing with tuberculous abscesses in connexion with bone disease is to prevent the formation of sinuses; and with this object I have for the last few years discarded the use of drainage-tubes after operating on such cases. This, however, cannot be done successfully unless there has been absolute asepsis during the operation and, in addition, the tissues have not been irritated by the use of chemicals. In order to secure this I recommend the use of rubber gloves for the surgeon, his assistant, and chief nurse during these operations. The abscess cavity is flushed out with sterile saline solution and any loose tuberculous sequestra are removed. Only a minimum of scraping appears to be necessary and this often resolves itself into merely wiping out the interior of the cavity with pieces of sterile gauze on holders. The wound is then closed, the deeper fascial structures being first sewn up with catgut. I consider this important, as in a few cases where only skin sutures were employed there was a secondary infection by tubercle of the deeper parts of the superficial wound with the subsequent formation of a sinus. In a fair proportion of cases the abscess cavity slowly refills, generally without any febrile reaction, and a second and occasionally a third operation may be necessary, the same process being repeated each time. Often months elapse before a second operation is necessary and, in a certain number of cases, the one operation is sufficient. I have recently seen a little boy on whom I operated in this way in January, 1904. His age was then four years and he was admitted for lameness which had been present for four months; his right thigh was slightly flexed and he was found to have a right iliac abscess. This was opened, flushed out, and the wound was closed. The original bone disease, which was probably in the upper sacral or lower lumbar spine, could not be demonstrated. The patient was discharged from hospital using a double Thomas's splint and he returned in three months with a recollection. This was dealt with in the same way and the boy, who lived in the northern suburbs of London, was kept on his back for 12 months, his mother placing him out of doors on some leads as often as she possibly could. He was lately brought to me for some trifling ailment and appeared to be perfectly well as regarded his sacral caries.

Now that we know more of the curative effect of the body fluids on tuberculous foci it appears to me to be unscientific to fill these cavities with iodoform emulsion or to attempt to disinfect the diseased area with such a chemical as pure carbolic acid. The object of the operative procedure should be to substitute healthy living body fluids charged with bactericidal substances in the place of the stagnant inert material removed. As far as possible I use the same procedure in the case of joints, always preferring an arthrectomy to an excision, the latter operation only being occasionally necessary in the case of adults. After a somewhat lengthy and extensive operation on a joint, and especially where gloves have not been worn for some reason and where there has been in consequence a good deal of "finger messing," I consider it safer to leave a tube in for 24 hours with a loose stitch which can be tied on removing the former. Should further drainage than this be necessary I consider that I have failed in the object which I set myself.

In the cases of tuberculous adenitis a clean excision of the infected glands is still the best treatment, after a short trial has been given to constitutional treatment, on the lines already suggested. The possible postponement of the operation thus entailed would be amply compensated for by the fact that the operative and constitutional treatment would be carried out simultaneously and on the importance of this I have already laid stress.

I need scarcely discuss here the importance of dealing with such possible sources of sepsis in cervical adenitis as carious teeth, otorrhœa, impetigo of scalp, &c.

I would thus summarise the treatment of these cases of osseous, arthritic, and glandular tuberculosis. 1. In all cases "open-air treatment" should be organised to meet the circumstances and requirements of the particular case. 2. That in every case the patient's powers of resistance to the disease should be periodically measured by suitable blood examination. 3. That, where the resistance is found low and there is no evidence of an excessive auto-inoculation, use should be made of therapeutic inoculations of Koch's new tuberculin in doses that are accurately controlled both as regards their amount and repetition by examination of the blood. 4. That in cases where there is evidence of excessive auto-inoculation absolute rest, with complete fixity of the diseased part, should be prescribed. 5. That in cases where it is evident that the diseased area is circumscribed and practically cut off from the circulation of tissue fluids efforts should be made to improve the circulation through the diseased area. The means we have at our disposal for this are fomentations, the use of certain mild irritants—e.g., liniment of iodine and Scott's dressing, light therapy, general massage, and local massage with carefully regulated movements. 6. That operative procedures should be directed to the removal of the dead, inert material, whether pieces of bone or collections of pus, and should be conducted with the most scrupulous aseptic precautions.

I have left myself but little time in which to discuss the important subject of genito-urinary tuberculosis. The most important recent advance in this particular branch of surgery has been in the improved means of diagnosis. By means of modern cystoscopy tubercle of the bladder and kidney may be diagnosed even before bacilli have appeared in the urine and constitutional treatment can therefore be adopted at an earlier stage with consequently greater hope of success. At a later period in the disease the condition of the second kidney in a case of renal tuberculosis can be ascertained with greater accuracy and there ought to be fewer of those surgical tragedies in which the less diseased of the two kidneys has been removed by the surgeon.

I feel that I have brought forward nothing that is original or new and that I have but touched the fringe of a large subject. I trust, however, that the experiences and views of other surgeons will fill in the gaps in this attempt on my part to collate the recent improvements of treatment of this important and ubiquitous disease.

Harley-street, W.

## HINTS TO THE GENERAL PRACTITIONER ON EYE STRAIN AND ITS SYMPTOMS.[1]

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EYE strain as a cause of numerous symptoms has been gradually occupying a great share of the attention of the general practitioner. This, no doubt, is partly owing to increase of knowledge regarding the eye but is due also to the increasing demands made upon the organ of vision by the more exacting conditions of modern life as regards the amount of near work which most of us have to do from childhood upwards. Hence the victims of eye strain, owing to the stress of modern life, are more numerous than in past times and hence also the increasing importance to the general practitioner of being thoroughly familiar with the varied symptoms which this common condition may give rise to

As we shall shortly see, the real cause of many symptoms produced by eye strain is frequently not suspected by the patients and therefore they have recourse for the relief of these in the first place to their family medical adviser and do not seek at first hand the aid of the specialist. Hence the importance to the practitioner of being familiar with the symptomatology of eye strain, as it will guide him to a correct diagnosis in such cases. Whilst correct diagnosis is always of great importance, here it is particularly so, as the recognition of the true character of the symptoms presented at once leads to their appropriate treatment and to their rapid and complete disappearance.

At first sight it seems very curious that the patients themselves, in a large proportion of cases, never suspect the eye

[1] A paper read at a meeting of the Glasgow Eastern Medical Society on March 7th, 1906.

as the cause of their sufferings. But on closer consideration the explanation of this apparent paradox, that a person should suffer from eye strain without being aware of it, is very easy. If eye strain always manifested itself by pain or discomfort in the eye its recognition would be easy. This, however, is not the case. In a very large number of cases of eye strain there is no pain whatever or discomfort of any kind in the eye, but the symptoms produced by it lie altogether outside of that organ and hence their true nature may be entirely unsuspected by the patient. Ocular headache is perhaps the best example of this. A patient may suffer from headache for many years without having the slightest suspicion that the real cause of the headache is to be found in the condition of the eye, because he is not conscious of any pain or discomfort in the eye itself. This is more especially the case when the headache is not near the eyes but at the top or back of the head, as it not unfrequently is. The symptoms of eye strain may lie, therefore, altogether outside of the eye and hence their true nature may not be suspected by the patient and may even for a time baffle the diagnostic powers of the medical adviser unless he possesses a knowledge of them.

Another reason for the non-recognition of eye strain as a cause of symptoms is that the patient may not be aware of any failure of vision and hence attention is not directed to the eye. There are several causes for this. In the first place, the acuteness of vision may be perfect and yet the patient may be suffering severely from eye strain. Eye strain in its worst forms is met with in cases of hypermetropia and yet in many of these cases the visual acuity if tested with the distance types is absolutely normal. Hence any visual deficiency is often unsuspected by such patients, who often pride themselves on their "good sight" and feel at first rather indignant when the advisability of wearing glasses is suggested. The hypermetrope must use his accommodation for distance and with its aid he may be able to see quite well. This means, however, a constant strain upon the ciliary muscle which in these cases is never at rest. The accommodation is active in these patients from the moment they open their eyes in the morning until they close them in the evening and hence this constant muscular strain evidences itself by numerous discomforts, of which headache in some form is the most frequent. A further reason is that often the error of refraction which produces the eye strain and its attendant unpleasant symptoms may be very slight, so slight as to interfere very little with the acuteness of vision as made out by distance tests. We have the best examples of this in the case of astigmatism, where cases of eye strain are to be found more frequently in the low than in the high degrees. This, again, seems an apparent paradox but its explanation is easy.

In very high degrees of astigmatism the patient's vision is very defective and no efforts on his part can improve it to any appreciable extent and hence there is no constant strain upon the eye. In the very slight degrees of corneal astigmatism, which simply cause a slight amount of blurring, there is a continuous effort of the ciliary muscle to counteract or to diminish this corneal astigmatism by producing a lenticular astigmatism by irregular contraction of the ciliary muscle. It is this constant and continuous strain on the ciliary muscle that produces the distressing symptoms from which such patients often suffer. It is often almost incredible what great relief can be afforded to such patients by the prescription of a cylindrical glass of half or even quarter of a dioptre. The explanation of the relief afforded by the correction of such slight defects is to be found in the fact that such slight defects give rise to continuous strain and that their correction puts the eye in a condition of rest.

These facts about eye strain—viz., that the patients themselves may not be aware of it, that it may exist with normal visual acuity as tested with the distance types, and that it arises very frequently in the case of very slight errors of refraction, should be familiar to every practitioner.

It will be seen, also, from what has already been said that such defects can only be made out on the most careful examination. It is now my routine practice to examine most cases of suspected eye strain under the influence of a mydriatic, as the slighter cases may entirely escape observation unless this precaution is taken and the accommodation paralysed. When we are dealing with very small degrees of astigmatism it will be evident that the correction of this must be done with great precision and accuracy. No pains should be spared to arrive at the exact correction, because anything short of this will have little effect in such cases. I have found in dealing with these cases that the mere subjective testing is at first not only unsatisfactory but often positively misleading, owing to spasm of the ciliary muscle due to the constant strain. Hence in my opinion the absolute necessity in many cases of paralysing the ciliary muscle in order to obtain an idea of the static refraction of the eye. Besides, the rest to the eye for a couple of days under the influence of homatropine is most favourable to the subjective testing which is necessary at a later visit.

I wish to emphasise the point that the prescription of suitable glasses in these cases of eye strain due to slight astigmatism is a proceeding of great delicacy, which can be successfully accomplished only by the specialist with a large experience of the peculiarities and idiosyncrasies of the human eye, and even this sometimes only with great patience and perseverance. The presumption of opticians seeking to deal with such cases is as absurd as that of the chemist who seeks not only to supply his customers with drugs but also to diagnose and to treat their ailments. The eye is an exceedingly delicate organ and immense damage is done by the prescription of glasses by those who are not properly qualified for the task. Every ophthalmic surgeon has experience of this and the practitioner should clearly understand that an optician cannot possibly have the requisite knowledge for dealing successfully with the very delicate, and often very difficult, problems which cases of eye strain frequently present.

It is often a matter of great difficulty even to ophthalmic surgeons of large experience to discriminate between symptoms due to refractive error and those due to early stages of organic disease of the eye. A mistake in the diagnosis may lead to most disastrous results to the patient and yet the public are invited to intrust the care of this most delicate of all organs into the hands of those who know absolutely nothing about the symptoms of disease in the eye or elsewhere. Let the medical profession beware of encouraging the public in the fallacy that the optician can distinguish between symptoms due to refractive error and those due to disease. This can be done only by those with a competent knowledge and long experience in diseases of the eye.

Let us now pass briefly in review the chief symptoms caused by eye strain. We may divide these into two classes: (1) the local symptoms, those having reference to the eye itself and its appendages; and (2) those occurring outside the organ itself, the general symptoms. We will begin with the second group, as these are the symptoms which are frequently not recognised as of ocular origin. The most frequent symptom of this group is headache.

The greater my experience of ophthalmic practice the more I am impressed with the frequency of eye strain as a cause of headache. For reasons already stated the true cause of the headache may have been suspected neither by the patient nor by the medical attendant. I saw six months ago a woman, aged 60 years, who for about 40 years had been greatly troubled with headache to such an extent that, as she expressed it, her life was more or less a misery. She came to me because she was not seeing so well with her glasses, which had been prescribed by an optician, but she had no suspicion that her headaches were due to eye strain. I found that she had a moderate amount of astigmatism which had never been corrected. I insisted that she should wear cylindrical glasses constantly and the cylinders combined with sphericals for close work. It was with great difficulty I could persuade her to wear the cylinders constantly, since she said she did not feel that she required them, having fair distant vision. This is often the great difficulty with such patients. I explained, however, that the distance glasses were prescribed not to make her see a great deal better but to put the eyes in a position of rest and to relieve her from eye strain. She wisely followed my advice with the result of the complete disappearance of her headaches, very much to her surprise. Here was a patient whose life had been rendered miserable by 40 years of headaches, which could have been completely relieved by the constant wearing of suitable glasses. Hers was a case of pure ocular headache. Its true cause had never been suspected either by the patient herself or by the medical men she had consulted with regard to it because there was absolutely no discomfort in the eyes and because the patient thought that she had good distant vision. This is a striking example of what I am very frequently seeing. Hence, every medical man may take it as

a very safe rule that in every case of chronic headache which does not yield to medical treatment the eyes should be carefully examined, even though the patient protests that he has excellent vision.

I would here call special attention to the fact, not so generally known as it ought to be, that in many cases headache is due not to a single cause but to a number of different factors, each of which must be removed before the patient can get rid of the headache. Failure to recognise this clinical fact is often the cause of the failure to give the patient relief. Eye strain in such cases is often an important contributing factor but the relief of the eye strain will not cure the headaches until all the other contributing factors have been dealt with. When a patient complains to me of headache being present the moment he opens his eyes but getting gradually worse as the day goes on then I regard it not as a simple ocular headache but as a headache of complex character, towards the production of which eye strain may be an important contributing factor but cannot possibly be the sole cause, otherwise there would be no headache after a good night's sleep. There may be other contributing causes, such as anæmia, constipation, and dyspepsia, which of themselves give rise to toxic headaches and when combined with eye strain render them of greater intensity. But if we are to get rid completely of the headaches we must deal not only with the eye strain but also with the anæmia, or constipation, or dyspepsia. Every contributing factor must be removed.

Ocular headache may occupy any position. Most frequently it is frontal but it may be vertical, occipital, and sometimes I have noted pain at the back of the neck due to eye strain. It may be constant or may come on in attacks of more or less acuteness with intervals of freedom. As a rule, ocular headaches are relieved by sleep and become more intense as the day goes on. Even attacks of megrim or sick headache with retching and vomiting may be caused by eye strain.

I have elsewhere discussed this subject in much greater detail and those who wish to gain a more precise knowledge of this distressing symptom I would refer to my papers on Ocular Headache, in the *Glasgow Medical Journal* for November, 1900, and on Chronic Headache in the same journal for January, 1904.

Apart from headache there are often very peculiar uncomfortable sensations in the head complained of by persons suffering from eye strain. A sense of fulness in the head and sense of tightness are sensations often complained of by patients suffering from eye strain and are permanently relieved by the constant wearing of suitable glasses. Giddiness is another familiar though less frequent symptom of eye strain. Eye strain is not a common cause of giddiness but still it should always be borne in mind when it cannot be traced to the more common causes, such as nervous disease, gastric disorder, or aural disease, and the patient's refraction should be carefully examined. As this symptom is frequently also found in muscular asthenopia, probably due to the consequent diplopia, the condition of the ocular muscles must be carefully investigated and suitable prisms prescribed if there is a lack of muscular balance.

I have seen many examples of giddiness relieved by the prescription of suitable glasses. About a year ago I saw a man who for many years had suffered from giddiness. At first it was thought to be due to locomotor ataxia and subsequently to cerebellar diseases as it was so distressing. The non-development of further symptoms led to the abandonment of this diagnosis. The patient observing that the attacks were worse after much use of the eyes consulted me. He was suffering from a high degree of hypermetropia and suitable glasses were prescribed for constant wear. The patient is now completely free from the vertigo which made him miserable for years. The vertigo was purely ocular and disappeared when the eye strain was removed.

Insomnia is not a common result of eye strain but it is sometimes met with and hence should always be thought of as a possible cause. More especially should it be suspected in the case of individuals who use their eyes a great deal. Severe eye strain produces as we shall see congestion of the vessels of the eye and lids and I have no doubt also some degree of cerebral congestion. Hence frequently the cause of the headache and of the sense of fulness and tightness in the head complained of so often in cases of eye strain. This cerebral congestion is probably also the cause of the insomnia sometimes met with in severe cases of eye strain. I have met with several cases of insomnia in students with errors of refraction and as the insomnia permanently disappeared on the prescription of suitable glasses there could be little doubt that eye strain had been the cause of it. The most striking case which I have seen was that of a tailor who was also of a literary turn and after a continuous day's labour with the needle he spent his evenings over books. He had been taking sulphonal and other hypnotics for years. He was astigmatic and after the wearing of suitable cylindrical glasses he was able to dispense with the hypnotics which he had been previously using.

There are certain local symptoms also in the eye and its appendages which frequently furnish the evidence of eye strain. Eye strain produces a congestion of the eye itself and of the eyelids. Hence a great number of cases of chronic conjunctivitis and especially chronic blepharitis or inflammation of the edges of the eyelids are directly due to eye strain. The use of lotions and ointments may help to modify these conditions but cure is impossible until the cause is removed by the relief of the eye strain. Hence in all obstinate cases of conjunctivitis and blepharitis which resist ordinary treatment the refraction of the eyes should always be very carefully examined, as refractive error may be the primary cause of the mischief. The chronic congestion of the conjunctiva and edges of the lids, which makes a person look as if he had been weeping and is a source of considerable disfigurement, is often due to eye strain. All local treatment is of little avail in reducing this chronic congestion of conjunctiva and lids until the patient is wearing appropriate glasses and the eye strain is relieved. I have seen also many cases where the patients were troubled with persistently recurring crops of "styes" until the discovery and correction of some refractive error put an end to this troublesome affection.

Nictitation or blinking caused by spasmodic contractions of the orbicularis muscle is a symptom which is sometimes the result of eye strain and often the first symptom which calls attention to the condition of the patient's eyes. I have seen this symptom as the result of eye strain more especially in the case of children. When the result of eye strain it gradually disappears under the regular use of atropine which puts the eye into a condition of rest. This is the first step in the treatment of those cases—viz., to keep the eye thoroughly under the influence of atropine for a few weeks until the blinking has completely disappeared. Then suitable glasses are to be prescribed for constant wear, correcting the error of refraction before the patient is allowed to use the eyes again.

The forms of eye strain which we have hitherto been dealing with are due to muscular strain, either ciliary strain, generally called accommodative asthenopia due to strain of the ciliary muscle or muscular asthenopia due to strain of the extrinsic muscles of the eye, of which strain of the internal recti or convergence strain is the commonest form.

There is another form of eye strain—viz., retinal asthenopia—which though much less frequent than the muscular forms is by no means rare and is often exceedingly troublesome to get rid of. In this condition the retina is hypersensitive and is very easily exhausted. There is a great sensitiveness to light sometimes amounting to photophobia, and there is usually some degree of pain in the eye or at the back of the eyes. There may also be some degree of conjunctival hyperæmia, associated with more or less lacrymation. This retinal hypersesthesia, as I call it, may or may not be associated with a refractive error. When associated with a refractive error it is found that glasses give little or no relief. In fact, the wearing of glasses in these cases seems to intensify the patient's sufferings. I have seen this more especially in cases of myopia. The wearing of the concave glasses in such cases increases greatly the patient's discomforts, because the very increase in the distinctness of the images thrown on the retina seems always to irritate it. Hence in many of these cases, even with errors of refraction, I often insist upon the patient laying aside glasses altogether for a time. I do this especially in myopic cases, where the laying aside of the glasses, though diminishing the visual acuity, does not mean any increased muscular strain. Great harm is often done in such cases by the patients having been advised to wear glasses constantly, which by increasing the brightness and distinctness of the images still further exhausts the retina and increases the suffering and discomforts of the patient.

Such retinal asthenopia is often met with in neurasthenic conditions of the nervous system, the retina sharing in the

general neurasthenia, and hence the treatment must be chiefly directed to the improvement of the condition of the patient's nervous system. In many cases it is associated with a general toxic condition such as is met with in constipation and dyspepsia and is probably due to defective nutrition of the retina owing to the toxic condition of the blood. In such cases, also, the treatment of the general health of the patient is all important and only when the patient's general health is brought into a satisfactory condition will the retinal asthenopia disappear. Local treatment, such as rest, protection from bright light, and the use of ocular analgesics, such as holocaine and dionine, will give a certain measure of relief to the sufferings of the patient, but the removal of the asthenopia and the ability of the patient to use the eyes will only be accomplished by improvement in the general health of the patient and until this is effected the asthenopia will continue in spite of all local measures. The removal of the varied symptoms due to muscular eye strain will be successfully accomplished by the prescription of suitable glasses and by intelligent care in the use of the eyes.

In many cases it will be necessary for the patient to wear glasses constantly even apart from near work. This is the part of the treatment which it is often very difficult to get the patient to comply with and yet is often most essential for the removal of the symptoms of eye strain. A patient with hypermetropia or astigmatism is constantly using his accommodation even for distance, hence the eye rapidly gets into a fatigued condition and is unable to accomplish without discomfort the further effort required for close work. If the hypermetropia or astigmatism be corrected and the lens constantly worn the eye is now in a position of rest and may be able to respond to the increased effort required by near work. The patient must be made clearly to understand that the distance glass is to be worn constantly, not in order to make him see more clearly but in order to make him see with less effort and keep the eye in a position of rest. In a very large number of cases of eye strain this is the all important point in their successful treatment and it is the point of the treatment which it is very often difficult to get the patient to adopt owing to the irrational prejudice in many minds against the constant wearing of glasses. Further assistance may be given if necessary by prescribing a special glass for near work and this I do in a large number of cases, even in young people, who are using their eyes much for near work. The object to be aimed at in cases of eye strain is to enable the patient to exercise the functions of vision with a minimum of exertion on the part of the eye.

Another part of the treatment quite as important as the wearing of glasses is intelligent care in the use of the eyes. I saw a patient a short time ago who was suffering from eye strain and who informed me that he was using his eyes for fine work for nearly 17 hours a day. There was no error of refraction whatever and the discomforts complained of by the patient were simply due to overtaxing the eyes—a condition which no spectacles could ameliorate. People must be taught that the eye can be overwrought and that it is only capable of accomplishing a certain amount of near work with comfort to the individual. I have often given people great relief by curtailing the amount of near work or by advising them to take periods of rest and not to work the eye too continuously for long periods of time.

Great benefit may also be derived by being careful to avoid exerting the eyes excessively in looking at very minute objects. Ladies suffering from eye strain I always advise for a time to abandon any fine sewing and rather to take to knitting, which being largely accomplished by the sense of touch does not throw anything like the same strain upon the eyes. Those who are fond of reading I specially request to use only books which have large and clear type. I often refer my patients to Lord Rosebery's "Napoleon," published by Humphreys of London, as a model of what a printed book ought to be, dull paper, thick black letters of good size, with ample room between the individual letters and the lines. A book printed in this way means a minimum of exertion to the eye. In the case of children this is of very special importance. Much greater attention has been given to this of recent years by the publishers of children's books. The series of school books published by Messrs. William Collins, Sons, and Co., "Collins' Clear Type Press," deserve special commendation as in the clearness and blackness of the type, the size of the letters, and the large spacing they form models of what such books ought to be and confer a real benefit on the rising generation of school children. Care with regard to proper illumination is also of importance in cases of eye strain. The light should be good and not too intense. The greatest care should be exercised that whilst the book or object looked at is well illuminated the eyes themselves should be in the shadow and not exposed to the direct rays of light. Hence the light should be coming from a source behind, at the side, or above. The source of light should never be in front, as the rays of light entering the eyes directly fatigue the retina and so lead to eye strain. I have seen children suffer a great deal with their eyes from being placed at school with their faces to a large window all day long instead of with their backs to it. When the position of the lighting was altered their symptoms disappeared.

In the treatment of eye strain it is therefore important to impress on the patient that more is required than the prescription of suitable glasses. The patient must be instructed to use his eyes in an intelligent way so as to throw a minimum of strain upon them and allow the function of vision to be exercised under the most favourable conditions. Attention must be given to the length of time the eyes are used for near work, to the size of the objects looked at, and to proper illumination. The intelligent coöperation of the patient is necessary in such cases to bring about a satisfactory result. Any local affections of the lids, the passages, or of the eye itself of course require careful treatment. A patient will not be able to use his eyes with comfort until all pathological conditions of the eye itself, of the lids, and the tear passages have been removed.

Glasgow.

## THE ORIGIN OF CHOANAL POLYPI.

By GUSTAV KILLIAN, M.D.,

PROFESSOR OF LARYNGOLOGY AND RHINOLOGY, UNIVERSITY OF FREIBURG IN BREISGAU.

AMONG nasal polypi the so-called choanal or benign naso-pharyngeal polypi occupy a special place. This has already been emphasised by Moldenhauer and lately Gerber has confirmed it. My own experience, which extends over 22 cases, also coincides. Choanal polypi are usually unilateral and solitary. They have a peculiar pear-shaped form, the broad end lying in the naso-pharynx whilst the stalk extends some distance into the nose. In the thick part of the polypus there is usually a large cystic space. This may be prolonged far into the stalk or the stalk may consist of nothing more than the thin wall of a particular cyst, which may, of course, be ruptured in the process of extraction. Once I observed a distinct groove of constriction where the pear-shaped part of the polypus passes into the stalk. Choanal polypi are characterised by the considerable size which they may attain. They are subject occasionally to inflammatory changes (according to my experience in 14 per cent. of the cases) which may terminate in partial or total gangrene. Spontaneous rupture of the cystic spaces in the polypi and spontaneous expulsion of the whole mass have been observed.

In microscopical structure these polypi hardly differ from the ordinary nasal polypi. The surface of the part lying in the naso pharynx is usually pretty firm, of a whitish appearance, with flattened epithelial covering. The tissue of the tumour is composed of loose œdematous connective tissue. The cysts take their origin from large collections within the trabeculæ and are therefore not clothed with epithelium. If the polyp inflames it becomes very red, swollen, and covered with fœtid purulent mucus and at points with false membrane. The tissue contains hæmorrhagic extravasations and is infiltrated freely with round cells.

From the point of view of treatment choanal polypi are very favourable. They may be laid hold of in various ways and readily torn out on account of their slender stalk. In the process the cyst in the body of the polyp, as a rule, bursts and I have observed immediately after the extraction, more particularly if the head be bent forward, a large quantity of sanguineous, serous fluid come away. In the majority of cases the polypi do not recur. The examination of the maxillary antrum shows in a series of cases a chronic inflammation of slight degree, with simple mucus, rarely purulent secretion.

Whoever glances through the literature of these peculiar growths will be struck by the fact that the views upon the

origin of choanal polypi are extraordinarily varied and indefinite. Usually the region of the choanæ is regarded as the point of origin. A number of observers have stated that they come from the middle meatus but without committing themselves definitely to the exact point of origin. Moldenhauer thinks that they usually originate laterally in the upper part of the posterior end of the middle turbinal.

My own interest in the question of the origin of the polypi described above took shape when two years ago I sought in vain, assisted by all the diagnostic aids recently placed at our disposal, for the origin of the polypus in a typical case. Even by means of median rhinoscopy, which has done me most excellent service in the examination of the nasal fossæ, no spot was found which could be regarded as the base of the polyp in question. I found in this case the accessory opening of the maxillary antrum unusually large and came to the conclusion that the polyp might have had its root within that cavity. The close observation of seven more cases enabled me to regard this as a definitely established fact of general application.

Anyone who wishes to convince himself of this should, in the first place, make as careful an examination as possible before the removal of the polypus, which for the most part is carried out in a hurried manner. The long nasal speculum should be introduced into the middle meatus, previously well cocainised, and the middle turbinal firmly pressed towards the septum. After cleansing the field of view the stalk of the polyp will be seen to disappear laterally behind the region of the uncinate process. By means of a nasal probe bent forwards at right angles the observer may succeed by following the stalk in entering the maxillary sinus through an accessory antral opening. By drawing the hook of the probe against the anterior edge of this opening, laying it against the posterior edge, and following the upper and lower margins, the great width of the accessory opening may be determined with ease in these cases. This width can be definitely measured by marking the relative position of the anterior and posterior margin of the ostium to the external nasal entrance. I have found it to be from 1·7 to 2·2 centimetres.

For further observations on the antral origin of the polypi in question I recommend their extraction to be carried out with the cold snare. The wire loop is passed over the body of the polyp, slowly tightened, and laid close up to the spot where the stalk comes out of the antrum. The process of snaring is carefully done so that the stalk is not cut through. Then the polypus is torn out. By such a procedure the length of that part of the stalk lying inside the antral cavity may be determined with exactitude. I have found it from three to four centimetres long. It may be almost as long as the rest of the polyp. In the extraction of the mass a certain resistance is felt. As a rule, in the first place the cyst in the naso-pharyngeal portion of the polyp ruptures and discharges a large quantity of fluid. Further traction tears the polyp away suddenly.

I explain the resistance so clearly felt during the extraction in this way, that the portion lying inside the antrum is not by any means so thin as it appears after extraction but is swollen up by cystic fluid inside that cavity, in the same way as the body of the polyp. In extraction this thick intramaxillary part is pulled through the (in spite of its absolute width) relatively narrow ostium into the nose. This, of course, crushes the intramaxillary portion and its cyst ruptures. The cystic fluid falls into the empty antrum. The stalk is found to consist of a collapsed cyst wall. The fluid left in the antrum comes away later, especially when the head is held in a particular position, as already mentioned. It is obvious that the groove of constriction which I have observed in the stalk of the polyp is caused by the edge of the accessory ostium. Choanal polypi must in reality all have the form of a constricted sac, of which the one half is in the antrum and the other in the nose and naso-pharynx. We distinguish, therefore, a maxillary from a naso pharyngeal part.

In further support of the maxillary origin of the choanal polypus it may be stated that on one occasion I saw the torn stalk project out of the accessory antral opening. In another case the remains of the polypus stalk within the antrum could be seen by means of a small mirror introduced into the middle meatus. Such cases would form suitable objects for investigation with the antroscope. It is to be hoped that with this instrument still more definite conclusions upon the actual point of origin within the antrum may be obtained.

The fact that the choanal polypi originate within the antrum of Highmore explains their general and especially also their clinical behaviour. At first there is apparently a simple antral polypus. Part of this, occasionally as a result of blowing the nose, finds its way through the wide accessory opening into the middle meatus. A parallel to this is the observation that by inflation and irrigation of the antrum through the accessory ostium a polypus is occasionally driven out of the cavity into the nose as mentioned by Grünwald and Hajek. If a slender antral polyp gets caught in the ostium and fixed there we have the conditions present for its further development into a regular choanal polyp. In the first place a high degree of congestion must take place in the nasal portion. Hence the polyp grows pretty rapidly. In the posterior half of the middle meatus it finds but little room and here the slender part of its body is formed. When it reaches the naso-pharynx it may without hindrance attain considerable size, but the circulatory conditions are already so hampered that it tends less to new tissue formation than to collections of fluid within the meshes of the tissue, so that the formation of large cysts in the naso-pharyngeal portion is the result. It can scarcely be doubted that the growing stalk of the polypus presses in its turn upon the walls of the accessory ostium and widens this entrance. Under certain conditions, perhaps as the result of an acute catarrh, marked constriction of the polypus stalk within the accessory opening supervenes. As a consequence we have the appearances of inflammation, and redness, swelling, blood extravasations, &c., which may proceed to partial and total gangrene and even to spontaneous expulsion of the naso-pharyngeal portion.

The history of the development of the solitary choanal polypus leads back to the origin of antral polypi. That these owe their origin to inflammation of the antral mucous membrane is generally admitted. A case recently observed by me is especially instructive in this connexion and is of all the more interest here because it demonstrates the entire developmental history of a choanal polypus. I observed in this case two years ago a simple acute maxillary sinusitus with citron-yellow, glassy, mucous secretion, which rapidly healed after several irrigations. Examination showed a year later nothing particular in the nose and middle meatus. A short time ago, after the lapse of about a year, the patient in question came to me with a typical choanal polypus which had its root in the antrum formerly affected.

It may be mentioned that all stages from the antral polypus to the fully formed naso-pharyngeal polypus may occasionally be observed. Once I saw two polypi project out of the accessory ostium. In the numerous cases in which the nasal cavities are filled with polypi instances often come under notice which are like typical choanal polypi. As a curiosity I may mention a case in which a solitary naso-maxillary polypus had an angiomatous structure.

Changes analogous to those in the region of the accessory antral opening may also, of course, be observed about the opening of other accessory sinuses, and polypi which have developed within these sinuses may protrude through the openings into the nasal cavities and there take on further growth. There is no doubt that a polypus springing from a posterior ethmoidal cell or the sphenoidal sinus may in rare cases be transformed into a choanal polypus which can be distinguished from the majority of the above-described maxillary choanal polypi only by the most careful examination of the origin, especially before extraction. Zuckerkandl has given pictures of such cases. We find in his book illustrations of polypi which had grown with long stalks out of the antrum through the accessory ostium into the nose. In the literature of the subject I find the interesting statement that Palfyn (1753) had already observed such a case.

Freiburg.

MEDICAL MAGISTRATE.—Mr. Robert Roxburgh, M.B. Edin., F.R.C.S. Edin., of Weston-super-Mare, has been placed on the commission of the peace for the county of Somerset.

SOMERSET COUNTY COUNCIL AND THE TRAINING OF MIDWIVES.—At a meeting of the Somerset county council held at Taunton it was decided to make a special grant of £150 to the Somerset County Nursing Association for the training of six nurse-midwives who would be willing to work for the association in the county of Somerset for a term of at least three years after the conclusion of their training.

# BUBOES AND THEIR SIGNIFICANCE IN PLAGUE.

BY WILLIAM HUNTER, M.B., C.M. ABERD.,
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THE occurrence of swellings in certain regions of the body is one of the commonest accompaniments of plague. The term "bubo" has been used so frequently and loosely in connexion with plague that the disease has generally become known, amongst the laity at least, as "bubonic plague." Why such an adjective should be constantly prefixed to the actual name of the disease is not clear and is certainly not based upon accurate scientific information. The presence of buboes is one of the most constant and at the same time one of the characteristic phenomena of certain types of the disease, yet when we review the whole history of plague as a dreadful "pest" it is found that so-called bubonic plague is by no means the most horrible manifestation of the disease and never occasions such devastation of life as other prominent forms of the disease, such as primary pneumonic plague. In fact, one might go so far as to describe ordinary bubonic plague as the more benign type of the disease, the malignant type being represented by primary pneumonic plague. Much has been written in regard to these bubonic swellings and from the voluminous literature on the subject one would conclude that almost the last word had been spoken in regard to this pathological lesion. Taking up the question from the standpoint of our present-day conceptions of bubonic plague, however, there would appear to be still many points wanting to complete the chapter dealing with such manifestations of plague and the true interpretation of their presence.

For the past four years I have been keenly alive to the presence of buboes and have noted many interesting points in regard to their pathological history and have endeavoured to adduce certain evidence in regard to their presence in plague. It is not my intention to enter into a deeply scientific description of the pathological appearances of buboes. Such is already well known. I wish, however, to bring forward my experience in regard to the anatomy of such swellings, the time of their appearance, their growth, their situation, their number, and subsequently to offer certain considerations regarding their origin in the disease.

1. *Their anatomy.*—The neck, the axilla, and the region of the groin are the commonest sites of these bubonic swellings. Their anatomy varies in these situations according to their severity. Occasionally it is only an enlarged gland with cortical injection; in other cases, however, the lesion may be widely spread, affecting structures placed at some distance from its focus of origin.

(*a*) *The neck.*—Buboes occur most frequently in the submaxillary, submental, supra- and infra-clavicular, sub- and retro-auricular, and parotid regions. The skin over the swollen mass is thickened and frequently covered with petechiæ. On section the mass is œdematous and hæmorrhagic. This appearance is not equally intense throughout. The glands are swollen and injected and imbedded in a densely infiltrated hæmorrhagic mass of connective tissue. The hæmorrhagic infiltration extends along the connective tissue spaces and surrounds the neighbouring muscles and other structures.

(*b*) *The axilla.*—The lymphatic glands and surrounding connective tissue form a soft œdematous mass of varying size. The super-adjacent skin is frequently covered with petechiæ. The œdema and hæmorrhage extend into the surrounding tissues to the scapular muscles, the pectoral muscles, the intercostals, down the arm, and up into the region of the neck. The breast in well-developed females occasionally participates and forms part of the bubonic swelling (bubo paramammario-axillaris.)

(*c*) *The groin.*—The swelling may be femoral or inguinal, or both, with extensions to the iliac and lumbar regions. The latter is common. The skin over the swelling is frequently covered with petechiæ. The hæmorrhagic and œdematous infiltration may extend down the thigh to the popliteal region or upwards over the lower part of the abdominal wall, into the scrotum, under Poupart's ligament into the pelvis, and spread over the belly of the ilio-psoas muscle, imbedding the iliac glands and the lymphatic duct and cystema chyli, with extensions to the kidney, the pancreas, and even the diaphragm.

Apart from these three situations buboes may occasionally be found in the region of the tonsil, the popliteal space, the cubital gland, the sacral region, the mesentery, and the lymphatic glands around the cœliac plexus, posterior to the liver, and about the pancreas.

2. *Date of onset.*—This varies extremely. Buboes may be one of the earliest signs of plague. In my opinion they do not appear until certain prodromal symptoms have shown themselves. Many appear within 48 hours of the onset of the fever. In other cases their appearance may be delayed for several days. Cases have been reported where the bubo or buboes did not appear until the eighth, ninth, or tenth day of the disease. The majority, however, are well marked before the fourth or fifth day of the illness.

3. *Their growth.*—This is usually slowly progressive. In a few cases it would appear to be absent for some days and followed by a sudden and rapid increase in dimensions. This is frequently observed in buboes which have been late in appearing. According to Lowson, the prognosis is grave in such cases. Buboes are very variable in size; they may become as large as pigeon's eggs or a man's fist, or even larger. At other times the swelling never reaches a greater size than a hazel nut.

4. *Their situation and number.*—The results of the post-mortem examination of 1000 cases of bubonic plague are as follows:—

| | |
|---|---|
| *Single buboes*— | |
| Right femoral bubo | 289 |
| Left ,, ,, | 289 |
| Right axillary ,, | 168 |
| Left ,, | 129 |
| Right inguinal | 34 |
| Left ,, ,, | 24 |
| Right cervical ,, | 22 |
| Left ,, ,, | 19 |
| Left parotid ,, | 2 |
| Right ,, ,, | 1 |
| Left sub-maxillary bubo | 2 |
| Right iliac ,, | 1—980 |
| *Double buboes*— | |
| Right and left femoral buboes | 5 |
| Right and left axillary ,, | 3 |
| Right femoral and left axillary buboes | 1 |
| Left femoral and right axillary ,, | 1 |
| Right femoral and left cervical ,, | 1 |
| Left axillary and left cervical ,, | 1—12 |
| *Multiple buboes* | 8 |
| Total cases | 1000 |

The following is a description of the cases in which multiple buboes were found.

CASE 1.—A Chinese female, aged 30 years. Large buboes were found in the following situations: (1) below and inside Poupart's ligament on the left side; (2) at the junction of the internal and external iliac vessels on the right side; (3) in the mesentery at its root; and (4) in the superior mediastinum. There was no consolidation of the lungs. The woman was pregnant. A six months' fœtus was extracted. Plague bacilli were found in the maternal placenta. The results of the bacteriological examination of the fœtus were negative.

CASE 2.—A Chinese male, aged 35 years. The following buboes were found: (1) in the right inguinal region; (2) around the left external iliac glands; and (3) in the right axilla. In addition to this the whole of the subcutaneous tissue of the right inguinal and lower parts of the right and left lumbar and umbilical regions of the anterior abdominal wall was œdematous and densely infiltrated with blood. Numerous plague bacilli were found in this tissue. There was no evidence of injury. The infiltrated area did not appear to have any connexion with the buboes present.

CASE 3.—A Chinese male, aged 52 years. The following buboes were found: (1) immediately below the left ear; (2) just above the left clavicle; (3) in the right axilla; and (4) in the left axilla. There was no apparent connexion between Nos. 1 and 2. No. 4 had no connexion with No. 2. The mesentery contained a large quantity of extravasated blood in which the lymphatic glands were imbedded. These glands were enlarged, slightly œdematous, and showed cortical congestion. Every organ and tissue of the body teemed with plague bacilli.

CASE 4.—A Chinese female, aged 18 years. The following

buboes of the size of a pigeon's egg were found: (1) in the right axilla; (2) in the left axilla; and (3) around the left external iliac glands. The hæmorrhage around the iliac glands extended over the ilio-psoas muscle, ran along the common iliac vessel to the aorta, and was continued upwards to the point of entrance of the inferior vena cava into the thorax. The bacillus pestis was found all over the body. The woman was seven months pregnant. No plague bacilli were found in the fœtus.

CASE 5.—A Chinese female, aged 25 years, a prostitute. Buboes were found in the following regions: (1) in the right axilla; (2) in the right inguinal region; and (3) in the left inguinal region. The hæmorrhagic extravasation in the inguinal regions extended downwards to the vulva. The extravasation was found in the labia as well as around the anterior portion of the vagina. The epithelial lining of the vagina was hyperæmic and showed the presence of a few petechiæ. The portio vaginalis was studded with minute points of hæmorrhagic extravasation. The arbor vitæ of the cervix was in a similar condition. The cervix and corpus uteri were œdematous, with mural hæmorrhages. Hæmorrhages were also found in the ovaries and the folds of the broad ligament. There was little tendency on the part of the extravasation to travel along the iliac vessels. The pathological changes appeared to be more or less confined to the pelvis. Plague bacilli were found in all the organs of the body.

CASE 6.—A Chinese male, aged 40 years. The following buboes were found: (1) in the right axilla; (2) in the left axilla; and (3) at the root of the mesentery. The mesenteric lymphatic glands were imbedded in extravasated blood and œdematous tissue. The glands were enlarged, hyperæmic, and œdematous, and cortical hæmorrhages were numerous. In several commencing necrosis was found. This mass of bloody tissue was crowded with plague bacilli. The ileum of the small intestine was hyperæmic. Hæmorrhages of varying size had taken place into the submucous membrane of this part of the gut. The solitary follicles were enlarged to beyond the size of a pin's head. Many of these looked like hæmorrhagic points; others were surrounded by a deep zone of congestion. The other parts of the small intestine and the large gut were normal to the naked eye.

CASE 7.—A Portuguese male, aged 28 years. Buboes were found in the following situations: (1) in the left cervical region; (2) in the right iliac region; and (3) in the left iliac region. The bacillus pestis was found in large numbers in the heart blood and in each of the bubonic formations. The hæmorrhagic extravasation, extending from either iliac bubo, met over the lumbar vertebræ and extended upwards, involving the lumbar regions and both kidneys, coming to an end just above the pancreas.

CASE 8.—A Chinese male, aged 30 years. Buboes were found in the following situations: (1) in the right femoral region; (2) in the right axillary region; and (3) in the left axillary region. The bacillus pestis was present in large numbers in each of these buboes. Large hæmorrhagic extravasations were found in the mesentery and around the cœliac plexus.

These cases of multiple bubonic formation are of great interest and point to the conclusion that plague is *ab initio* a disease of a septicæmic nature. If we allow this premiss, then the bubonic formations must be regarded as occurring secondary to blood infection. Buboes may appear early in plague. In fact, they may be existent before many definite symptoms of the disease are present. In other cases they appear late, during the course of a well-defined case of septicæmic plague. The reasons for this variability in the time of their appearance are by no means obvious. Again, such a swelling may be single, double, or multiple, without a satisfactory explanation of the process at work being evident. It has been my experience to find general lymphatic enlargement in ordinary bubonic plague. The glands are moderately increased in size, œdematous, and show extravasations of blood, especially in the cortical layers. Not only is this general enlargement of the glands found in bubonic plague but it is met with in cases of other types of the disease. In the purely septicæmic type this enlargement is one of the commonest changes found post mortem. In the pneumonic form—i.e., secondary lung plague—the glands are also similarly affected. In primary pneumonic plague hyperæmia and petechial hæmorrhages occur in the lymphatic glands without much evidence of enlargement. These points are much in favour of the view that the plague virus exerts a special action on the general lymphatic system. In plague the lymphatic apparatus is one of the first systems to be affected. Such a preference for certain body tissues is known in bacteriology. The pathological changes produced by the plague virus in lymphatic tissue are, in my opinion, merely one of degree. There is glandular enlargement in pure septicæmic cases of the disease but no particular gland or series of glands is affected. In pneumonic cases a similar condition of affairs is found. Buboes may be found to complicate pneumonic plague and *vice versâ*.

Bubonic plague, in the absence of primary pneumonic plague, forms the majority of the cases met with during most epidemics. The series of changes which occur after infection would appear to be the following. The bacillus pestis multiplies in the general blood stream and primarily exerts its deleterious action on the lymphatic apparatus. In this swelling, œdema, and hæmorrhagic extravasation take place. These changes are accompanied by a periglandular œdema and hæmorrhage which become diffuse. The degenerative action of the virus on the peripheral circulatory apparatus is now well recognised.

Summing up from a pathological standpoint the various lesions met with in a typical case of plague, one is rather drawn away from the idea that buboes are the result of infection through the skin and mucous membranes in the immediate neighbourhood. It would appear, on the other hand, that the formation of buboes in the body is dependent on the micro-organism itself, its virulence, and the individual disposition of the person or persons attacked. Simple and widespread hæmorrhagic extravasations are quite as common as buboes. They are regular hotbeds of plague bacilli; and in this respect resemble the condition of affairs found in recent buboes. They also occur in fairly definite localities in the body, yet no one has thought them worthy of consideration from the point of view of the focus of entry of the bacillus pestis into the body.

Many septicæmic diseases met with in animals are analogous to plague in man. From a clinical point of view the appearances presented by such animals have so resembled plague that Orientals are firmly convinced that epidemics of a similar disease to plague break out amongst their animals some time previously to the occurrence of plague in man. The condition of septicæmia hæmorrhagica found in cattle in Hong-Kong resembles plague pathologically. In both diseases do we find general hyperæmia, general lymphatic enlargement, the occurrence of irregular areas of hæmorrhagic extravasation, œdematous infiltrations, and the presence of a micro-organism in the blood and tissues of the body. My results are more or less in accordance with those of Bitter who regards plague as a hæmorrhagic septicæmia. According to Albrecht and Ghon this is only so in severe cases.

It is said that the occurrence of buboes in definite situations in the body is strong evidence in favour of the infection having been occasioned through some focus in the area of tissue drained by the lymphatic glands which are the seat of the bubonic enlargement. Viewing the subject from certain points of view—e.g., the study of the anatomical connexions, the question of bare feet, the results of direct inoculation in man and animals, &c., there would appear to be much evidence in favour of such an occurrence.

What one has to consider is the following: Does the plague virus reach man, in nature, through the skin? Is this the natural mode of transmission of the disease from man to man? What avenues of natural infection do we find in animals? Are the modes of infection the same in man and animals? Is there clear evidence of the channels of infection in man? The consideration of these points in the presence of a large amount of plague material has led me to conclude that the opinions arrived at by many investigators are, on better acquaintance, by no means obvious. In the first place, many cases of plague are not definitely bubonic. The lymphatic glands are enlarged but no definite bubonic formation is produced. Again, in different epidemics of plague different types of the disease may be most prevalent. In one epidemic the bubonic variety of the disease may be largely in evidence; in another epidemic the septicæmic type may be responsible for the majority of the cases. Further, a certain variation during an epidemic is often found. Septicæmic plague may be most in evidence during the earlier stages of the outbreak and followed by a great increase in the number of bubonic cases during the latter half of the epidemic, and *vice versâ*. Further, buboes may be double or multiple. One may be present in each groin or

in each axilla, or one in the iliac region with another in the neck. In other cases buboes are found in the most unexpected places. Again, it is asserted that femoral buboes are most common amongst those who go about barefooted.

In cases of bubonic plague it is only in rare instances that evidence is forthcoming as to the presence of wounds, abrasions, &c. It is not denied for a moment that plague infection frequently occurs through the skin and is followed by the formation of a bubo. In these cases I am of the opinion that some evidence of such an infection is usually present in the skin. In animals inoculated by this method such evidence is usually present and in all cases of authenticated infection through the skin which I have come across there has been evidence of entry of the bacillus pestis. A papule, a blister, a pustule, or even a wound is found in the skin, and frequently the bacillus pestis has been found locally. An excellent example of such a mode of infection is the following. A Chinese butcher was engaged to assist in performing the post-mortem examinations on experimental animals which had succumbed to plague. On one occasion a post-mortem examination was being held on a pig which had died from severe septicæmic plague. The butcher accidentally scratched the back of his right hand with the broken end of one of the ribs. The injury was slight and just tinged with blood. It was washed, sucked, and disinfected. It caused him no inconvenience at the time. He discontinued the necropsy at once. Two days later the man complained of sickness and diarrhœa, with severe headache and a general feeling of malaise. He ascribed the symptoms to malaria from which he frequently suffered. On the following day he felt hot and uncomfortable. The scratch on the back of his right hand felt sore and burning. His right arm felt weak with shooting pains in the muscles. The scratch showed nothing in particular. Very slight induration was made out but this was ascribed to the effect of strong antiseptic solutions. Being suspicious of plague the man was at once isolated. Slight traces of lymphangitis were found extending up the forearm. On the following morning a small vesicle had developed over the site of the original scratch. The surrounding skin was red, congested, and indurated. The lesion was extremely painful. The lymphangitis was more marked and had extended to the arm. The axilla was tender but no bubo had developed. The temperature was 102° F., the eyes were congested, the tongue was coated, and he still complained of slight diarrhœa. The contents of the vesicle were examined bacteriologically and numerous plague bacilli were found. The blood was also examined with a positive result. The man was treated in the plague hospital. A bubo developed in the right axilla. The original vesicle dried up and the lymphangitis disappeared. A few days after his admission to hospital several small vesicles developed on his legs. All contained plague bacilli. Within five days of the onset of the illness the man presented all the symptoms and physical signs of plague in its bubonic form and died seven days after admission to hospital from cardiac failure.

Such a case is interesting from several points of view—namely: (1) the exact localisation of the point of infection; (2) the pathological lesions at the point of infection; (3) the occurrence of lymphangitis; (4) the presence of the bacillus pestis in the vesicle; (5) the presence of the bacillus pestis in the blood; (6) the late appearance of the bubo; and (7) the occurrence of secondary vesicles containing the plague bacillus.

This case is a good instance of bubonic plague with undoubted blood infection. The formation of the bubo was a secondary process if we consider the exact date of the onset of the illness. The bubo did not develop for several days, during which there were headache, vomiting, diarrhœa, general malaise, somnolence, and the presence of the bacillus pestis in the primary vesicle and in the blood. Other instances of similar cases have been met with from time to time in Hong-Kong.

Again, cases of bubonic plague are known to follow the bite of a plague rat. (Cases already reported by Maxwell in his report on Plague in South China; by Clark in the Hong-Kong Sanitary Reports for 1900 and 1901; by Simpson in his report on Plague in Hong-Kong; and in India by the Indian Plague Commission.) Even the bites of plague stricken human beings have produced plague infection (Austrian Plague Commission). In artificially infected animals bubonic swellings are found. For instance, after feeding animals with plague-infected material buboes may be found in the groins. Cervical, submaxillary, and parotid buboes may be discovered, yet no injury of the buccal mucous membrane or carious teeth could be held accountable.

The tonsils are held by many investigators to be a channel through which the bacillus pestis effects an entry. Great stress was laid upon this avenue of infection by the members of the Austrian Plague Commission. I have frequently examined the root of the tongue and the tonsils in cases of plague and have found marked œdema, enlargement of the papillæ, and great hyperæmia of the lymphadenoid tissue and tonsils with extravasation of blood. The tonsils may be found twice or three times their normal size. The bacillus pestis has been found abundant in these situations. No evidence of such a mode of infection could be traced in experimental plague.

A careful dissection of bubonic swellings shows us that they are much more extensive than is apparent from the appearance which they present clinically. For instance, the bubo met with within the confines of Scarpa's triangle does not in a great many cases represent the focus of most intense pathological change. The bubo in Scarpa's triangle may be quite small but on cutting down on Poupart's ligament we find frequently a continuance of the hæmorrhagic extravasation around the inguinal glands. These are often somewhat larger than the femoral and the pathological changes are more marked. Further dissection centralwards leads us to the external iliac glands, in and around which one may find most intense lesions. The glands are larger, the œdema is widespread, necrosis may be present, and the surrounding extravasation of blood spreads in all directions—namely, over the ilio psoas muscle reaching the crest of the ilium, inwards to the true pelvis, and invading the broad ligament and its contents. Upwards the extravasation spreads along the iliac vessels to the aorta, spreading out like a fan over the muscles of the posterior wall of the abdomen and reaching the perirenal connective tissue and organs about the diaphragm. This hæmorrhage frequently joins another mass of blood which surrounds the cœliac glands. The latter are often enlarged, œdematous, and show extravasations of blood. These glands with the surrounding hæmorrhage form a more or less typical bubo. The condition of these cœliac glands is frequently overlooked in making post-mortem examinations on plague cases. The presence of such lesions is of importance in regard to the possibility of a gastro-intestinal avenue of infection in plague.

In the majority of articles dealing with the bubonic variety of plague it is stated that there is an absence of anything like a peripheral lymphangitis. The belief is widely diffused that the infection takes place in these cases through the skin, but the bacillus pestis in its passage from the focus of its entry to the seat of bubonic formation does not excite inflammation. Beyond the possible discovery of the point of entry of the bacillus, therefore, there is no external evidence of the occurrence of such an infection through the skin. Albrecht and Ghon and many others have laid down that the absence of lymphangitis is characteristic of plague. Obvious reasons for such a statement do not, in my mind, appear to be justified. Cases observed by myself in which a definite point of entry of the bacillus pestis could be found are not confirmative of such a view. An instance of the presence of definite lymphangitis following direct cutaneous inoculation has already been given in the foregoing. Other cases have been met with and the lymphangitis present may be slight in degree but if looked for carefully it will not be missed. The persistent absence of anything like an acute lymphangitis in cases of bubonic plague is strong evidence against the skin-inoculation theory of plague. Skin infection in plague occurs only after some definite breach of continuity of the skin has taken place. Ragged nails, abrasions, minute wounds, &c., are liable in plague-infected areas to be infected with the bacillus pestis. In the absence of more definite evidence, however, the question of cutaneous infection in plague would appear to be exaggerated.

In conclusion, all bubonic swellings show the presence of extraneous micro-organisms. The infection with other bacteria would appear to occur early. The micro-organisms most frequently found present are staphylococci, streptococci, the bacillus coli, and its varieties. These organisms exert a deleterious action on the bacillus pestis and in advanced buboes are found present even in greater numbers than the bacillus pestis. It would appear to be of importance to determine what part the bacillus pestis actually takes in the formation of the bubo. In my opinion, it is

extremely doubtful if the plague bacillus can be held responsible for the full development of the bubo. In fact, my own experience leads me to believe that buboes are the result of the local growth of the bacillus pestis *plus* pyogenic bacteria, and the latter by their more active growth cause a full development of the bubo with all its typical pathological appearances and eventually crowd out the actual bacillus pestis itself.

Hong-Kong.

## TWO CASES OF EPIDERMOLYSIS BULLOSA.

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EPIDERMOLYSIS bullosa is still so rarely seen that the record of the two following cases occurring in the same family is of interest, especially from a histological and therapeutical point of view.

CASE 1.—The patient, a single woman, aged 26 years, was sent to me for opinion on August 2nd, 1905. She had suffered all her life from the formation of bullæ, occurring chiefly on those parts of the body exposed to friction or traumatism. She was the youngest member of a family of eight children. Both her parents were healthy and only in the case of a brother (the subject of Case 2) was there a history of any similar skin disease. There was no history of syphilis either as regarded the patient or her family but "consumption" had been present in the family of the father. The condition of the skin was as follows. On the anterior fold of the right axilla was a bulla as large as a shilling; it was tense and slightly cloudy. Over an irregular area of almost three inches long the anterior axillary fold was reddened and in parts was covered by the drying skin of former bullæ. A similar condition, but less marked, existed on the left anterior axillary fold. Two bullæ, each of the size of a sixpenny-piece, were seen on the right arm near the extensor surface of the elbow and one on the inner aspect of the calf. All were over a day old and two had a slight halo of surrounding redness. Fine white scars, remnants of frequently recurring or long-standing bullæ in former years, existed on various parts of the body either alone, as on the face, or accompanied by brownish pigmentation or redness, as on the legs and axillary folds. The most serious changes existed on the shins. The lower third of both legs was practically covered with brown pigmentation and fine scarring. No varicose veins were present. Over the right shin the pigmented and cicatricial tissue extended over an area five and three-quarter inches long and four inches broad. Small pigment patches were present on the back and at the waist level where bullæ had previously occurred.

*Previous history of the bullæ.*—The skin at birth was healthy. When the patient was three days old the mother noticed a "blister" as large as half-a-crown on one leg, and two days later smaller ones on both eyelids. Then the face and head were constantly affected until the child was six years old. The mother states that as soon as one was healing the child would fall down and knock her face or head and then they started afresh. At one time the mother kept the child's head covered constantly with a bonnet and the hands in gloves, as she observed that blisters always followed knocks and scratching. The face and head had been rarely affected since childhood. At seven years of age the legs began to be constantly affected by bullæ, and ever since that time the bullæ which occurred on the legs lasted the longest and recurred more frequently than on any other situation. The waist was, after the legs, the most often affected until four years ago, when the patient adopted a looser style of clothing. The armpits were affected when the sleeves were tight or the lining thick. The arms were rarely attacked and the hands never. The soles of the feet were not so often involved as the legs. Bullæ had occurred a few times in the mouth. Bullæ on the face or upper part of the trunk lasted a short time, about a week; bullæ on the legs might last for weeks or months. Walking or standing about caused bullæ to arise on the legs or soles. Bullæ might appear even on parts with cicatricial tissue. The bullæ had always been larger and more frequent in summer; in winter they had sometimes been entirely absent for a week or two. Stout and all forms of alcohol aggravated the condition; the patient did not think that indigestion affected their occurrence in any way. As regarded subjective sensations there was no itching until the bullæ were drying up. The patient might be unconscious of the presence of bullæ on the upper part of the body, but she might have much pain when they occurred on the foot or on the leg when she had to walk or to stand. She had, indeed, been obliged to lie in bed for several weeks at a time to hasten the healing of bullæ on the legs. Slight pressure did not cause the formation of bullæ, but friction applied for a minute in warm or mild weather would cause a bulla to appear several hours later. No milium-like cysts were present. The nails showed the dystrophy noted in all recorded cases of this disease. All the nails of the fingers and toes were defective and had been so since the patient was three years old. They were raised, ribbed, and discoloured, thickened at the base, pale, brittle, and irregular at the free edge.

*General health.*—The patient had had good general health, though she complained of being readily tired. She perspired freely and readily and suffered greatly from the cold but had never had chilblains. When excited she flushed over a sharply defined patch at the angle of the jaw and side of the neck. The heart and lungs were normal. Menstruation was regular but scanty. The patient had never had scarlet fever or measles.

*Treatment and subsequent clinical history.*—It appeared to me that treatment must be directed to the improvement of the cutaneous circulation and toning up of the small blood-vessels. With that aim the patient was ordered to take four grains of extract of ergot thrice daily. She adhered to this treatment during the whole of the hot month of August and she very definitely stated that she felt stronger and that the bullæ were fewer in number and less in size during that month. She omitted the ergot from Sept. 5th to 12th and during that week she developed more and larger bullæ than she had experienced during all August. From Sept. 12th to 20th she resumed the ergot and reported that she had fewer bullæ and "took much longer walks than usual without any bad effect." From Sept. 20th to 27th she had no ergot and when I saw her on the latter date several bullæ had formed. A specimen from a bulla smaller than a three-penny-piece, three days old, with a slight red halo, situated high up on the right calf, was taken for microscopical examination. A photograph of the legs was taken and this showed a tense hæmorrhagic bulla near the left internal malleolus and a flabby cloudy bulla on the sole of the left foot. On Oct. 25th the patient was seen again. She had taken ergot from Sept. 27th to Oct. 15th and had therefore taken no ergot for ten days before Oct. 25th. Only one bulla, however, had arisen since; this freedom she attributed to the fact that the weather had been dry and cold. On the 28th she developed a feverish cold and cough and was confined to bed for several days. When convalescing during the first days of November she found a bulla starting on the extensor aspect of the right elbow and though she at once took double doses of ergot another bulla developed on the opposite elbow. The weather at the same time, it should be noticed, became warm and damp. When the patient was seen on Nov. 7th she still felt very weakly. The roof of the bulla on the right elbow was taken for microscopical examination. Despite this disappointing recurrence the patient very decidedly said that since she had been under the present line of treatment she had been better in every way than she had been for years. She had previously given up all hope of improvement of the bullous eruption, having been under the care of many medical men and having attended many hospitals without beneficial result. When seen on Nov. 22nd she said she had been free from bullæ until the 20th, when two small ones developed on the toes while she was out walking. From November, 1905, to March, 1906, she continued the use of vascular tonics; as prolonged exhibition of ergot produced headaches she was only able to take ergot for a week or a fortnight at a time and during the intervals (of similar length) she took nux vomica. During the warmer weeks of May and June, 1906, she had several bullæ, some being of considerable size. The nails continued to make progress in appearance. She reported herself as being improved in general health and freer from bullæ than she had been for years.

CASE 2.—The patient (a brother to the patient in Case 1), a married man, aged 44 years, had suffered from the formation of bullæ all his life. He was first seen on Oct. 25th,

1905. He had at that time two fresh bullæ, a small one which had started on the previous day just below the right thumb nail, and one on the reddened part of the right shin, two days old, and measuring nearly one and a half inches in diameter. The bulla on the thumb was tense and without surrounding redness. On the dorsum of four fingers were red patches with the dry scaly coverings of former bullæ. Over an area extending from the ankle to two-thirds up both legs and laterally in irregular patches towards the calf the cutaneous surface was reddened, in parts scaling, and in parts moist, with a drying sero-sanguineous exudation; in parts also there were pigmentation and scarring. The veins were not varicose. A section of the bulla on the thumb was taken and the roof of the bulla on the shin was also removed for microscopical examination. No milium-like cysts were present.

*Previous history of bullæ.*—The bullæ first appeared when the patient was one month old. He had had scarlet fever at the age of five years and measles when he was eight years of age. Bullæ appeared during both these illnesses and were much worse immediately succeeding them. The bullæ were most troublesome and frequent at the age of 16 years. At the time of examination the legs suffered more than any other part of the body. For many years past the legs had never been free from bullæ except for a few weeks during the cold weather of winter. The backs of the hands were the next most affected; then the ears. If the patient knocked the back of the nails when at work "a blood blister formed and the nail came off." The palms of the hands had never been affected; the soles of the feet were affected from the thirteenth to the eighteenth year of age. At times bullæ appeared where the collar rubbed the neck and where the sleeves pressed against the axillæ. The bullæ were always worst in warm weather. The patient did not think that they were affected in any way by drinking alcohol. He thought, however, that they were affected by the general health; at any rate, when he felt well they were less frequent. Bullæ arising on the upper part of the body or hands gave no subjective sensations till they were drying up; but when they occurred on the legs they were preceded by intense itching which subsided as the bullæ formed. The nails were dark coloured, ribbed and thickened, some having terraced free edges. Until the fourth year of age the nails had been normal.

*General health.*—The general health of the patient was below the average—that is to say, he had no definite organic disease but was easily tired and found standing long at his work to be "a burden." He used to feel the cold intensely, but had only rarely suffered from chilblains. The two children of the patient had no form of skin disease.

The patient was seen for the second time on Nov. 22nd after he had been taking ergot regularly for a month, and he spontaneously remarked that the bullæ were drying up on the legs "just three times as quick as usual." On Dec. 6th he remarked that the "few blisters" which had troubled him had disappeared more rapidly than they had ever previously done. On Jan. 17th, 1906, he stated that he had had better health than for many years past and that the bullæ had been fewer and had passed off very quickly. At the end of February he repeated his former statements and drew attention to the fact that his nails had grown flatter, less ridged and raised from the finger pulp, and that they were "easier to cut." During May he omitted ergot and took strychnine for a month, with the result that bullæ appeared more frequently on the leg, and the general health, in his opinion, deteriorated.

HISTOLOGICAL REPORT. (*Four Bullæ were Examined.*)

*Specimen 1 (from Case 1).*—On Sept. 27th the small bulla on the calf was frozen with ethyl chloride. A section was placed in alcohol, cut in celloidin and stained with hæmatoxylin and eosin. The following appearances were made out on examination with the half inch and the $\frac{1}{12}$th oil immersion lens (Leitz). The roof of the bulla was composed of the stratum corneum and the stratum lucidum. The contents of the bulla consisted of shreds of fibrin and a number of leucocytes, chiefly the polynuclear variety, but mononuclear cells were also seen. No micro-organisms were visible. At the margin of the bulla the cells of the stratum granulosum were very swollen and hence were prominently visible even under the low power lens. Beyond the margin of the bulla the epidermis appeared to be normal; there was no degeneration of the cells of the stratum papillare as observed by G. T. Elliot (*vide infra*). At the base of the bulla the stratum granulosum cells were faintly stained, the granulation being invisible with a low power lens. In the stratum mucosum the cells of the upper layer were swollen and flattened longitudinally, the protoplasm faintly stained, the nuclei in some were granular, and in some did not take on any stain. Most of the cells showed a degree of perinuclear œdema. In the deeper layers the degenerative changes were not so marked. The lymphatic spaces between the cells were dilated and an occasional mononuclear leucocyte was seen in several of the sections. In the stratum papillare the papillary processes were somewhat flattened, not extending so far as normal into the corium. The cells in some parts appeared slightly swollen but they stained well and showed no degeneration. The spaces between the cells were slightly dilated. In some parts there was some exudation between the stratum mucosum and the stratum papillare, with delicate threads of fibrin and a few leucocytes (see illustration). In other parts there was a slight exudation,

Specimen 1. Bulla three days old. Magnification about 37.

without fibrin, between the stratum papillare and the corium. In the corium the blood-vessels were dilated and their endothelial lining cells were swollen, but there was no surrounding infiltration. The connective tissue cells were swollen and the lymphatic spaces considerably dilated. Several sections were stained with acid orcein in order to examine the elastic tissue. A slight degree of atrophy of this tissue was found.

*Specimen 2 (from Case 1).*—The roof of a large newly ruptured bulla over a week old, removed from the elbow on Nov. 7th was found to consist of the stratum corneum stratum lucidum, stratum granulosum, and in some situations part of the stratum mucosum also remained adherent. The cells of the last were pale, scarcely taking on any stain at all, their nuclei being unstained. Adhering to the roof of the bulla were some delicate fibrin network, a few leucocytes, and granules arising probably from degenerated cells.

*Specimen 3 (from Case 2).*—A section of a small one-day-old bulla taken from near the thumb nail. Unfortunately it was not deep enough to include the corium. The changes were very similar to those in Specimen 1. The roof of the bulla consisted of the stratum corneum and stratum lucidum, and here and there a cell from the stratum granulosum. The contents of the bulla were a delicate network of fibrin, leucocytes, and a few degenerate cells of the stratum granulosum. No micro-organisms were seen. At the margin of the bulla the stratum granulosum was very swollen and prominently visible even under the lowest power lens and apparently disappeared at the base of the bulla where its cells and those also of the upper layers of the stratum mucosum were swollen and faintly stained. They were not, however, so degenerate or œdematous as in Specimen 1. Between two papillary processes was seen a small collection of fibrin with one or two leucocytes; at that site alone the deepest layer of cells of the stratum papillare was more faintly stained than normal. Between the cells the lymphatic spaces were somewhat dilated but no leucocytes were seen.

*Specimen 4 (from Case 2).*—The roof of the large bulla occurring on the unhealthy surface of the leg in Case 2 was examined and was found to consist of the entire epidermis except the stratum papillare. The stratum corneum and stratum granulosum were very thin; the cells of the stratum mucosum were flattened and swollen. The contents of the bulla consisted of fibrin and leucocytes, the polynuclear leucocytes predominating more than in Specimens 1 and 3.

*Summary.*—The exudation leading to the formation of a bulla occurred in Specimen 1 between the stratum lucidum and the stratum granulosum; slight exudations also occurred between the stratum mucosum and the stratum papillare, and beneath the latter; in Specimen 2 the bulla formed between the stratum granulosum and the stratum mucosum; in Specimen 3 between the stratum lucidum and the stratum granulosum; and in Specimen 4 between the stratum mucosum and the stratum papillare. No streptococci or staphylococci were found in any of the bullæ. In Specimen 1 the cutis was examined and showed no inflammatory infiltration but hyperæmia and much serous exudation. The elastic tissue showed a slight degree of atrophy.

*Previous records of microscopic appearances.*—The appearances described by former observers in regard to the position of the exudation do not tally, as is only to be expected with a disease the clinical appearances of which vary from bullæ without any red halo, healing in a week, to bullæ occurring on surfaces that remain permanently red from their repeated recurrence, individual bullæ healing only after weeks or months, and leaving permanent scars or pigmentation. On looking through the bibliography with the comparatively few records of microscopical examinations we find the following:—

Goldschneider (1882) found that the roof of the bullæ in his case had some prickle cells.

Bonajuti (1890) found that the bulla occurred under the

horny layer, the stratum mucosum and stratum papillare being unaffected.

G. T. Elliot (1895) found in a fresh bulla that the roof was composed of the horny layer and a large portion of the stratum epitheliale. The papillæ at the base of the bulla were œdematous; the blood-vessels were dilated but not surrounded by cellular elements. In the subpapillary plexus there was extensive perivascular infiltration and the upper half of the corium was drenched with exudation. He concluded that the process was a dermatitis. In 1900, however, he had another case under his care and the examination of the bullæ led him to revoke his former pronouncement that the condition was a dermatitis. The bullæ examined occurred between the rete and the corium. Sections were taken from the skin of various parts of the body where no bullæ were present in order to ascertain whether the entire epidermal covering was abnormal in subjects of epidermolysis bullosa. After staining with the polychrome-glycerin-ether method he found that the cells of the deepest layers, especially the layer next the corium in the interpapillary processes, showed various degrees of degeneration. He concludes that owing to the cellular degeneration present the normal coherence between rete and corium is diminished to such an extent that the former is easily lifted or swept off by the wave of serous exudation pouring out from the blood vessels in response to some irritation greater than they are subjected to under ordinary conditions. His final sentences may be quoted in full. "I still believe that the prime feature in the existence of the process is an acquired or hereditarily exaggerated irritability of the cutaneous vascular system. Whether in addition there may be a congenital instability of the cells constituting the stratum basale so that they readily and easily undergo degeneration is a question I do not feel prepared to take up at present."

Columbini (1900) found that the covering of the bulla was formed by the stratum corneum, the base by the rete cells; the papillæ showed œdema and some infiltration with dilatation of the blood-vessels. The elastic tissue was normal.

Wende (1902) found the exudation occurred between the rete and the papillary layer.

Bukovsky (1903) examined a blister caused by scratching the forearm. Half an hour after the trauma it was excised and sections showed that the bulla had formed between the corium and the epidermis. There was no inflammatory infiltration round the blood-vessels. The epidermis was healthy. The milium-like bodies frequently found in cases of epidermolysis bullosa are, he points out, also found in cases of pemphigus and dermatitis herpetiformis; they are, he considers, retention cysts of the sweat-ducts due to their orifices becoming blocked in the healing of the bullæ.

*Concluding remarks.*—From the above it is evident that the exudation in epidermolysis bullosa varies in position not only in different subjects but in different parts of the body of the same subject. The position of the exudation is therefore not an essential point in the diagnosis, as it is in the case of some bullous conditions. Much depends upon the amount of congestion and the degree of trauma. When a bulla occurs on the shins, where trauma is a frequent exciting cause, and delayed circulation an almost constant predisposing cause, and especially when the skin is already reddened and altered by previous bullæ, it is clear that the entire epidermis may be readily lifted up from the corium. This was found to be the case in Specimen 3. So also when there is sufficient exudation to cause a large bulla it is natural that the abundant exudation should find an outlet deeper in the epidermis than a smaller exudation. At one time Hallopeau sharply differentiated the cases of the disease in which scars existed from those which presented no scars; since 1898, however, he has recognised them as belonging to one and the same disease. It is readily understood that where bullæ repeatedly occur on the same sites, or take long to heal, some reactionary inflammation must set in and in time lead to pigmentation and scarring.

The cause of the disease is important from the point of view of prognosis and treatment. The fact that the bullæ are worse in warm weather points to the dilatation of the cutaneous blood-vessels being a prominent causal factor. Treatment directed to constricting the vessels and raising the vascular tone produced in the above cases a marked improvement in a very short time. It has been noticed before that dermatitis herpetiformis has been improved by cardio-vascular tonics, and it is probable that the beneficial effect in the present cases is traceable to a similar result. In the present state of our knowledge it would not be profitable to stray further into the realms of hypothesis or theory regarding the nervous control of the vessels. G. T. Elliot's careful and thorough examination of the unaffected skin in one of his cases proved the existence of a defective stratum basale, but the absence of such a condition in the above cases, and in most recorded microscopical observations, negatives the idea that it can account for all cases of epidermolysis bullosa. The elastic tissue in the above cases was slightly deficient; it may be that in future more attention should be turned towards this structure, its deficiency being another possible contributory cause of epidermolysis bullosa.

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Upper Berkeley-street, W.

## A CASE OF FRACTURE OF THE UPPER END OF THE TIBIA FROM INDIRECT VIOLENCE.

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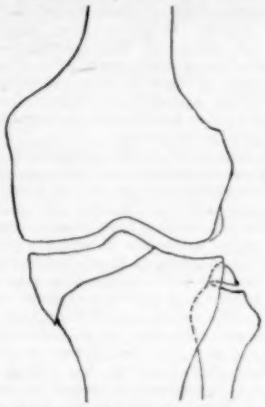
FRACTURES of the head of the tibia from indirect violence are met with as the result of falls upon the feet when the condyles of the femur are brought in violent contact with the articular surface of the tibia. Sometimes the internal portion of the latter may be crushed and the external lateral ligament ruptured and genu varum be produced. Also one or other tuberosity may be separated as a result of lateral flexion of the leg, as in cases of difficult labour or version. But the cases are rare and a clear history is difficult to obtain.

In the following case the patient was able to give a very definite statement of the manner and circumstances of the accident and the x rays enabled the exact nature of the injury to be established. The unusual character of the causal violence is also worthy of note.

The patient, a man, aged 45 years, was standing on a dray unloading chicory. When the accident occurred he was in the act of turning from his work and was bearing his weight upon his left leg. The right leg was slightly flexed and turned at right angles to the left. It was balanced on the fore part of the foot which was turned slightly outwards. At this moment a ten-stones bag of chicory, falling from a height of about 40 feet, struck him on the back of the head. He happened to be facing a wall and the impact knocked him against it in a leaning position, but not before he was able to raise his hands to protect himself from being dashed against it. His head was bent down upon his sternum. He was not knocked down. As soon as he tried to walk he felt pain below the right knee. When admitted to the Leeds General Infirmary there were some swelling about the right knee and much tenderness in the neighbourhood of the inner tuberosity but no deformity. Crepitus was felt but the exact situation of the fracture was not made out until some days later when a skiagram disclosed it. The accompanying diagram is a copy of the skiagram. The position of parts in it is reversed. It appears

to represent the left knee but in reality it was taken from the right. The inner tuberosity is seen to be split off from the head of the tibia obliquely, carrying with it not only the internal articular facet but also the spine. In the fibula the styloid process has been separated. There is no displacement of the parts. The treatment consisted in the



Diagrammatic representation of fracture of the upper end of the tibia from indirect violence.

application of a back splint with a foot-piece and passive movement was commenced at the end of a week. Ten weeks later the patient had a freely moveable joint and an apparently sound limb and was walking about with the protection of an elastic bandage.

There is a striking resemblance between this fracture and a Pott's fracture. Both are the result of indirect violence. In this case the fracture of the tibia was a primary lesion and the tearing away of the styloid process of the fibula followed when the compression or tendency to displacement of the parts on the inner side of the joint put the external lateral ligament on the stretch. Either the ligament or the bone might have broken; it was simply a question of relative strength. There is a strong suggestion in the skiagram of the influence which the crucial ligaments exerted in determining the exact line of fracture through the tibia, for the separated fragment carried with it the spine and in all likelihood the tibial attachments of one or both crucials. It was probably the strength of these ligaments that led to a fracture instead of a dislocation. Finally, if the description of the position of the right leg at the moment of the accident has been accurately described both the crucial and both lateral ligaments were relaxed and consequently the joint was ill prepared to receive the unexpected strain which evidently acted through the internal condyle of the femur and towards the inner side of the joint.

Leeds.

## A SIMPLE FORM OF CLINICAL VISCOSIMETER.

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AND
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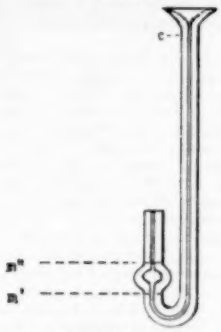
WHEN considering the question of a viscosimeter suitable for clinical purposes we were especially desirous of adopting a form of instrument which should be simple in construction, easy to manipulate, and at the same time require but a small quantity of blood for each estimation. The particular form which we ultimately adopted (Fig. 1) consists simply of a U-shaped piece of capillary tubing with the one arm about six centimetres in length and blown out at its upper end into a cup-shaped receiver with a thin edge (*c*), whilst on the short arm, about two centimetres in length, there is a small elliptical bulb. As the most convenient place from which to take the blood necessary for an estimation we have preferred the lobe of the ear, for not only is it less sensitive than any other part but it can be made to bleed readily without any manipulation, whilst the position of the hanging drop permits the viscosimeter to be always placed vertically underneath.

FIG. 1.




Clinical viscosimeter.

The method of making an observation of the viscosity with this instrument is as follows. The lobe of the ear is first well cleaned with ether and a special fine-pointed knife is then inserted into the most dependent part of the lobe. The viscosimeter, which has previously been warmed to the temperature of the patient's body, in much the same way as a clinical thermometer, is placed beneath the hanging drop of blood (Fig. 2) and the receptacle of the instrument is filled. The moving thread of blood is carefully watched through its course down the longer limb and round the bend of the tube; the seconds finger of a stop-watch, which has been held in readiness, is started as soon as the column of blood reaches the point M' and is stopped the moment that it gains M''. The time which will now be read off to one-fifth of a second is that taken by a quantity of blood sufficient to fill the elliptically shaped bulb in flowing through the long

FIG. 2.

Showing method of employment of the viscosimeter.

capillary arm of the instrument. This time value when compared with that given for water, for which the viscosity is well known, gives us directly the viscosity coefficient of the blood.

When using these tubes the following points must be observed, otherwise serious discrepancies and irregularities may arise.

1. The tubes should be scrupulously clean. After use they

are best cleaned as follows: The blood is at once driven out by a small force pump in order to prevent clotting occurring in the tube. The viscosimeter is then filled with nitric acid and placed aside for a short time; the acid is then replaced by distilled water, alcohol, and ether and the tube is finally dried by blowing a current of air through it.

2. The viscosimeter should be previously brought to the temperature of the patient. The temperature should be noted.

3. The receptacle of the instrument must be filled with blood, for if the column in the capillary breaks from the fact that there is an insufficiency of blood the estimation is valueless on account of the uncertainty in the pressure head which the method presupposes a constant.

4. It is a wise precaution to affix on to the short arm of the tube a small piece of rubber tubing, so that if the blood should at first refuse to flow through the instrument movement may be initiated by slight suction.

5. Viscosity determinations should as far as possible always be accompanied by simultaneous blood counts.

Mr. T. Hawksley, of 357, Oxford-street, London, W., has undertaken to prepare cases containing half a dozen of these viscosimeter tubes, a stop-watch, a small force-pump, a special needle, and a short length of rubber tubing. He will also separately supply fresh viscosimeter tubes in half dozens.

This instrument, which we have now been using for the past four months, has been found to give very satisfactory results. In our observation on healthy people we have obtained values ranging between 4·8 and 5·6 times that of water at blood temperature; whereas in pathological states we have recorded considerable variations.

## NOTES UPON FIVE CASES OF RENAL NEOPLASM.

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DURING the last decade renal surgery has made marked progress, chiefly because of the greater safety with which operative procedures can now be carried out compared with formerly and also, particularly more recently, because of the advances which have been made in the investigation of the condition of the renal organs, not merely in their combined functioning, but also in regard to their individual capacity. I do not propose to describe the methods now commonly in vogue to assist diagnosis and prognosis in renal surgery but those upon which chief reliance may be placed are:—

1. *For both kidneys:* (*a*) The examination of the urine as regards the daily quantity, the specific gravity, and presence or absence of abnormal products; (*b*) the estimation of the urea excreted in 24 hours; (*c*) the freezing point of the blood (cryoscopy); and (*d*) the fluoridzin and methylene-blue tests.

2. *For each kidney:* (*a*) Cystoscopic examination of the bladder, noting the appearance of the ureteral openings and what comes from them—e.g., blood or pus; (*b*) ureteral catheterisation, with the use of the above tests to the urine collected from each kidney; and (*c*) Luys separator, with or without indigo-carmine subcutaneous injection.

The history given by, and the examination of, a patient may materially assist in the diagnosis of a renal neoplasm, but it must be recognised that the history may be most misleading and that frequently hæmaturia and other symptoms common to several diseases and to different parts of the urinary tract may be thought to be vesical in origin when due to kidney affections, or *vice versâ*. Even if one kidney be enlarged and palpable the difficulty is not wholly overcome, as the enlargement may be compensatory to disease of the other kidney or there may be bilateral disease (Kummel). Or again, a patient may have an enlarged kidney, but the prostate may also be enlarged and the bleeding may have the characters associated with bladder trouble. To determine, therefore, from which part of the urinary tract hæmorrhage arises may be difficult. There are certain signs which are presumptive evidence of renal neoplasm, but in the majority of cases, if not in all, it is probably a wise precautionary measure to examine the bladder cystoscopically to exclude vesical affections and at the same time, if possible, to get definite evidence of a kidney affection by observing the urine as it passes from the ureter. In some of the cases where bleeding is present this is not difficult and it materially assisted the diagnosis in the first patient whose history is quoted below. Hæmaturia is not infrequently the first symptom in both renal and vesical neoplasm and in such cases the chief means of diagnosis is cystoscopy. Examination of the urine in many cases of hæmaturia wholly fails to give any clue either to the source or cause of the bleeding—no tumour cells or tube casts being seen, even after repeated microscopical examination of deposits from centrifugalised urine. These statements are almost self-evident but they seem worthy of remark as they are frequently forgotten and error in diagnosis and treatment results.

Renal tumours may occur at any age and are observed with almost equal frequency in the two sexes and unfortunately they are not uncommonly malignant. A local tumour may be observed before any symptoms are manifested but frequently hæmaturia is the first thing observed by the patient even in cases where the kidney has attained a considerable size. The quantity of blood lost has no relation to the size of the tumour and the bleeding may be extremely profuse. The bladder may actually become over-distended with blood clot. The urine may be very dark in colour or bright red. Irregular clots may be passed as if from vesical bleeding but these and the dark colour of the blood may simply mean that free bleeding has occurred but that micturition has not immediately followed the inflow of blood to the bladder. Worm or string-like clots, casts of the ureter as seen in Case 4, are not in my experience common. Indeed, it may be said that the old dicta regarding hæmaturia are valueless and are sources of error.[1] Some of these points were illustrated in the following five cases upon which I have operated and of which I give the histories.

CASE 1.—The patient, aged 63 years, was a healthy man who had been exposed to considerable hardships in many countries. For three or four months he had observed at intervals a little blood in the urine but at no time had the bleeding been severe. No cause for the bleeding had been discovered and it was unassociated with pain or any other symptom. On examination of the abdomen the left kidney was found to be enlarged, readily palpable, and irregular on its surface. Cystoscopy showed blood coming from the left ureteral orifice while the bladder was healthy. Neoplasm of the left kidney was diagnosed and nephrectomy advised.

Nephrectomy through a lumbar incision was performed. The operation presented no difficulty as there were few adhesions. The patient made a good recovery, the wound healing by first intention. The tumour replaced practically all the kidney substance and microscopically proved to be an adeno-carcinoma.

With regard to the after-history, the patient died one year and five months after the operation "apparently from senile decay." At the necropsy the seat of operation was healthy, the ligatured pedicle being represented by a small mass of fibrous tissue. There were no secondary deposits.

CASE 2.—A married woman, aged 30 years, first noticed blood in the urine in February, 1901, and from that date at intervals of two or three weeks bleeding recurred and lasted on each occasion for three or four days. The bleeding was usually worst during menstruation. In June, 1901, clots were observed for the first time and the bleeding persisted longer than on previous occasions. Some of the clots were string-like but many were large and irregular. At this date also, for the first time, she had pain in the right loin and frequency of micturition. In August, when the patient was first seen by me, she was extremely anæmic. The right kidney was easily palpable and irregular in shape. The urine contained much blood; it was red but without clots. The specific gravity was 1020. There were no tube casts or special cells. The amount of urine was 40 ounces daily. The bleeding was continuous; there were no intervals of clear urine. Neoplasm was diagnosed and nephrectomy was advised. For a week previous to the operation calcium chloride, 15 grains thrice daily, was administered.

Operation was performed on August 13th. Nephrectomy through a lumbar incision was done, the kidney being readily excised, as there were no adhesions. The patient made a good recovery, the wound healing by first intention; she was out of bed on the twelfth day and left the hospital

[1] Vide Edinburgh Hospital Reports, vol. ii.

for home on the twenty-first day from the date of the operation. The tumour was localised to the upper part of the kidney and was wholly within the capsule but a mass attached by a narrow pedicle filled the pelvis of the kidney. Microscopic examination proved it to be an adeno-carcinoma of the Gravitz type—i.e., a nephroma.

As to the after-history, the patient is perfectly well four and a half years after operation.

CASE 3.—A man, aged 50 years, one year before coming under observation had blood in his urine for a week. He was unable to assign any cause for its presence. It seemed perfectly symptomless and there was no recurrence until six weeks previously (June, 1901) when again without any cause bleeding began. During these six weeks he had lost much blood and the bleeding was still very severe, solid clots forming in the vessel. He had no pain or other symptom, unless frequency of micturition. The left kidney was much enlarged and very easily palpated, irregular and elastic to touch. He had never had any discomfort from it and it was not painful on pressure. Cystoscopy showed a healthy bladder and bleeding having ceased the day the examination was made no blood was observed coming from the ureter. The diagnosis of neoplasm was made and operation was advised. A very large varicocele was observed on the left side which the patient asserted had only come on three months previously. That the varicocele had only existed during that time was almost certain as he found it so inconvenient and was so alarmed by it that he consulted a surgeon at once (*vide* remarks).

Operation was performed on August 10th, 1901—nephrectomy through a lumbar incision. The kidney was adherent to the surrounding tissue but not firmly; very free bleeding occurred while loosening it. A mass of tumour filled the renal vein and pressed on the inferior vena cava. This mass could not be removed and was ligatured along with the vessels while the ureter was separately dealt with. The patient made a good recovery. The wound healed by first intention, but a week later there was evidence of some tension and on introducing a pair of sinus forceps a quantity of serum was evacuated. A sinus persisted from which a thin sanious fluid discharged for several weeks. By Sept. 1st the patient was out of doors and able to walk about. On Oct. 1st he was back to business. The tumour replaced almost the whole of the kidney substance and microscopically was a round-celled sarcoma.

With regard to the after-history, for four months the patient was able to do his work but in February, 1902, he began to lose ground and by March was confined to his house. At this date a tumour of large size could be palpated in the left lumbar region, anteriorly, which moved freely with respiration. He died in September, 1902, 14 months after operation.

CASE 4.—A man, aged 52 years, had at intervals during the last six months observed blood in his urine. The blood was intimately mixed with the urine which was porter-like, never red in colour. Occasionally irregular clots were present. The bleeding came on without any cause but now and then he noticed pain along the line of the left ureter anteriorly. There was no pain in the posterior lumbar region. I saw the patient in December, 1903, three days after the occurrence of a much more profuse hæmorrhage than there had previously been, and which was associated with great pain in the bladder and marked frequency of micturition. Catheterisation had been used but gave no relief at the time and since its first use he had failed to pass any urine naturally. The bladder was over distended and so firm that I concluded it was full of blood clot. The prostate was not enlarged and the kidneys were not palpable. I advised no operation, washed out the bladder, and pointed out that the clot would probably gradually break up and be got rid of. In the course of four days this took place and after the clots were got rid of the urine was passed naturally and free from blood. Three weeks later cystoscopic examination showed the bladder to be healthy and the ureteral openings normal in appearance. One or two worm-like blood clots were passed with the urine but no other bleeding took place. Pain having been on the left side the diagnosis of probable left renal tumour was made and nephrotomy was advised.

Operation was performed. A lumbar incision exposed the kidney which had a smooth enlargement of about the size of an orange at the upper pole under the capsule, and the organ was therefore excised. The patient made an uneventful recovery. Microscopically the tumour was an adeno-carcinoma of the Gravitz type—i.e., a nephroma. Now, two and a half years after the operation, the patient is in excellent health and has not had a bad symptom.

CASE 5.—A woman, aged 35 years, 12 months previously (August, 1900) complained for the first time of a gnawing pain in the right side which lasted for a fortnight. Five weeks previously (July, 1901) she had pain in the right side and frequency of micturition, and observed that the urine was discoloured. This discolouration was found by her medical attendant to be due to pus, and on August 25th, 1901, there was a considerable quantity of pus in the urine. She had never passed blood. The urine had a specific gravity of 1020 and contained much pus. The quantity of urine per diem was 40 ounces. Tubercle bacilli were present in the deposit. The right kidney was easily palpable and tender on pressure. It was irregular on its surface. The left kidney was not easily detected on palpation. The diagnosis was tuberculous kidney.

Operation was performed on Sept. 3rd, 1900. Through a lumbar incision the right kidney was exposed and an abscess was detected with its wall adherent to the peritoneum. It was determined to remove the kidney as from its irregularity and size it was believed to be extensively tuberculous. During its separation from the surrounding structures the nature of the condition was recognised to be polycystic, but as there was one abscess of some size presumably tuberculous in nature and the cause of her symptoms, the excision was proceeded with. At the point where the peritoneum was adherent the peritoneal cavity was opened, but the opening was immediately plugged with gauze and later sutured with catgut. The patient made a good recovery and the wound healed by first intention. The kidney was a typical polycystic growth, cysts varying in size from many minute cavities to cysts as large as a walnut. The abscess communicated with the pelvis of the kidney.

As to the after-history, the patient left hospital on the fourteenth day after operation. The day after operation the quantity of urine secreted was 32 ounces and during her stay in hospital the quantity averaged 30 ounces. For two and a half years after the operation the patient remained quite well, had no pain or frequency of micturition, and the urine was free from pus. She also gained weight. The left kidney had become palpable, even though the patient was stouter, but it did not seem to be very irregular in outline. One year later she died with symptoms of general peritonitis but her medical attendant informed me that she had at no time any symptom of renal insufficiency.

These five cases illustrate four types of renal tumour: (1) adeno-carcinoma invading the whole of the kidney; (2) adeno-carcinoma (nephroma) (the type of tumour described by Gravitz as adrenal rest tumours); (3) sarcoma; and (4) polycystic. In each of the first three cases reported the affected kidney was readily palpable. In Case 2, indeed, the kidney was so mobile that, being the right and in a woman, it was thought at first to be an example of moveable kidney with hæmaturia; the quantity and persistence of the bleeding, however, together with the irregular shape of the swelling, made the diagnosis of neoplasm comparatively easy. The other three, although readily palpable, were not so mobile and in Case 1 and Case 3 the irregularity was strongly in favour of neoplasm. In Case 3 (the sarcoma) the irregularity and increased size were very manifest. There was no bleeding when cystoscopy was used and the bladder was seen to be quite healthy, with no abnormal appearance at the left ureteral orifice. In this case also the varicocele on the left side was very striking and the definite statement of the patient that it was of recent origin—of three months' duration—pointed to local interference with the venous return. Such a varicose condition, with a history of recent onset, is a point of importance and should always be remembered as a possible assistance in diagnosis. Mr. Henry Morris specifically mentions varicocele[1] as an occasional result of renal neoplasm and remarks that he drew attention to it in 1884, Guyon having previously described it in 1881. Lequeu attributed it to pressure on the spermatic vein by enlarged glands but Morris believes that it may be due to pressure on that vein directly by the tumour. In Case 3 the renal vein was blocked by tumour growth and at the removal of the kidney this projecting portion was cut through, it being impossible to remove it. Morris points out that if the varicocele in such cases was invariably due to glandular invasion and pressure,

[1] Surgical Diseases of the Kidney, 1901.

as Lequeu says, it would contra-indicate operation. This patient rapidly lost ground but for nearly five months after operation he was able to attend to his business and after the operation there was no recurrence of hæmorrhage. I believe his life was prolonged and rendered more comfortable by operation (than if no operation had been performed) but, on the other side, it must be remembered that the operation was one of much gravity and that a mass of tumour was knowingly left behind. In similar circumstances I am not prepared to say I would advise operation. In Case 5—the polycystic kidney—the symptoms were solely due to the accidental presence of a tuberculous abscess, a rare complication in such cases. There was none of the symptoms associated with polycystic kidney, a fact explicable on the ground that the tumour had not attained a large size. Hæmaturia, sometimes present in such cases, was absent. As the polycystic condition is usually bilateral operative interference is, as a rule, deprecated, more particularly as removal of one kidney has seemed to hasten the cystic degenerative changes in the other but operation has been successfully performed in several instances where removal seemed justified because of pain, &c.

An analysis of the symptoms in the first four cases shows: (1) that hæmaturia was the first symptom in each and that, indeed, no other symptom was complained of; (2) the bleeding in three was very profuse and had the characters of vesical hæmorrhage; (3) in Case 1 the bleeding was small in quantity although the tumour was a large one, replacing nearly the whole of the renal substance; (4) in only two (Cases 2 and 4) were worm-like clots observed and in Case 4 only months after the onset of the bleeding; and (5) in none were there any tumour cells or casts discovered in the urine.

Edinburgh.

# A Mirror
OF
# HOSPITAL PRACTICE
## BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Proœmium.

## SOUTH DEVON AND EAST CORNWALL HOSPITAL, PLYMOUTH.

A CASE OF ENLARGED WANDERING SPLEEN; SPLENECTOMY.

(Under the care of Dr. R. H. LUCY.)

A WOMAN, aged 21 years, but looking a mere child, was sent to the South Devon and East Cornwall Hospital on March 24th, 1905, by Mr. J. Telfer Thomas of Camborne for abdominal swelling and pain, with occasional vomiting. Her family history was negative but the patient stated that she had always been "delicate" and had passed through the usual illnesses of childhood. At the age of 12 years she became "jaundiced" with some, though not severe, abdominal pain. When 13 years old both legs ulcerated—purple spots followed by slight swelling, desquamation, and ulceration. An attack of influenza followed by "jaundice" and slight abdominal pain occurred when she was 19 years old. Menstruation commenced at the age of 17 years, never quite regular, merely a scanty loss for two days. Two years before admission, when recovering from her second attack of "jaundice," she noticed while dressing a hard swelling above the left groin, moveable, not tender, variable in size, "sometimes double what it was at other times," while the history she gave and persisted in was very suggestive of a left-sided intermitting hydronephrosis. For the past two years the general health had been fair with occasional attacks of vomiting and faintness, when the abdominal tumour seemed largest, but there was comparative comfort in the intervals. The patient was well nourished but had a peculiar straw-coloured tint. No blood examination was made previously to operation. The diagnosis varied between enlarged left kidney and left ovarian tumour.

On April 1st, under anæsthesia, a hard moveable mass could be felt in the left lumbar, umbilical, and hypogastric regions. Per vaginam the lower pole lay anterior to the uterus and apparently was moulded to the pelvis. The abdomen was opened in the middle line from the navel to the pubes and the hugely enlarged dark purple spleen was gently and carefully lifted out on to the parietes. It was seen that owing to rotation of the organ on its vertical axis the characteristic notches faced backwards and so made a definite diagnosis, even under anæsthesia, impossible. This rotation had also caused torsion of the pedicle and great engorgement; the pedicle was long enough to allow easy delivery on to the parietes, being about two inches broad and composed of huge thin-walled veins and tortuous pulsating arteries. The pedicle was clamped with stout compression forceps close to the hilum and transfixed and tied in two halves with stout catgut on the proximal side of the forceps and the organ was cut away, leaving a voluminous "cuff" of peritoneum beyond the ligatures; the component vessels were then tied off separately with fine catgut and the peritoneal cuff was cast over the face of the stump with similar material. On releasing the latter it glided easily upwards and backwards under cover of the left lower ribs. After ascertaining that the pedicle was clear of bowel and that the other abdominal viscera were healthy the abdomen was closed by mass sutures of silkworm gut. On removing the forceps 25 ounces of blood escaped from the splenic vessels, and when drained the organ weighed 22 ounces, or 47 ounces in all.

After operation the patient became somewhat collapsed and complained of great pain in the left hypochondrium which was eased by one-sixth of a grain of morphine given hypodermically. On the second day she complained of abdominal pain with some distension. Her temperature was 101° F. and her pulse was 112. Slight pleural friction was detected on the third day at the left base posteriorly, while the bowels acted freely on the fourth morning and the temperature steadily declined and became normal on the eighth day, rising again to 101·6° on the tenth evening and became, and remained, normal on the fifteenth day and onwards. The sutures were removed on the ninth day and the wound was found to be soundly and cleanly healed. 5 grains of red bone medulla were ordered to be given thrice daily on the fifteenth day and was continued till her discharge from the hospital on May 1st, when she looked ruddy and well, and there was no enlargement of any lymphatic glands.

On April 28th Dr. W. L. Pethybridge, honorary pathologist to the hospital, reported that a specimen of the patient's blood yielded the following result on examination: red cells, 4,000,000 per cubic millimetre (80 per cent.); hæmoglobin, 70 per cent.; and white cells, 10,000 per cubic millimetre. A differential count of the white cells showed: polymorphonuclears, 68 per cent.; small lymphocytes, 23 per cent.; large lymphocytes, 5 per cent.; and eosinophiles, 4 per cent. No abnormal cells, either red or white, were seen. On May 6th Dr. Pethybridge reported that a microscopic section of the spleen showed no deviation from the normal structure. Dr. Lucy recently heard from Mr. Telfer Thomas that the girl looks and expresses herself as being perfectly well and free from pain.

*Remarks by* Dr. LUCY.—Cases such as the above are of great clinical interest from the fact that a correct diagnosis is seldom possible before operation owing to the spleen, by its enlargement, losing its characteristic shape, and if in addition it rotates on its pedicle the notch or notches cannot be felt. Increase in bulk and weight causes early elongation of the pedicle and so allows excursions of the spleen into regions of the abdomen where least expected. I regret that I did not ask for a blood count before operation but I confess that the shape and position of the tumour did not suggest an enlarged wandering spleen to either my colleagues or myself for even under anæsthesia one of the former, who made a vaginal examination, thought it was an enlarged kidney, the original diagnosis being an ovarian tumour. The girl's own history—elicited without leading questions—suggested most strongly intermitting hydronephrosis.

I wish to thank my colleagues, Mr. C. E. Russel Rendle, for assistance at the operation, and Dr. Pethybridge for his pathological reports.

## WESTERN INFIRMARY, GLASGOW.

A CASE OF INTUSSUSCEPTION; OPERATION; RECOVERY.

(Under the care of Dr. DUNCAN MACARTNEY.)

THE patient, a boy, aged one year and eight months, was sent to the Western Infirmary by Dr. James Todd of

Maryhill on August 18th, 1905, and was admitted under the care of Dr. Duncan Macartney who was acting for Dr. T. K. Dalziel at that time. The child was taken ill suddenly that morning and when Dr. Todd was called in he at once recognised the serious condition of the patient and hurried him into hospital seven or eight hours after the onset of the disease. The child was a poorly-nourished, thin little creature in a state of collapse. There had been vomiting, tenesmus, with blood in the stools, and a rounded swelling could be felt in the right inguinal region. When the parts had been carefully prepared for operation and the child put under an anæsthetic a median incision was made below the umbilicus. The mass was easily felt but as it did not readily come through the wound it was manipulated in the cavity and fairly easily reduced. When reduced the parts were brought out of the wound for inspection and showed that not more than two or three inches had been inflected, as could be noted by the congested state of the intussusceptum. Half of the appendix had been included in the intestinal grip which gave it an exceedingly curious appearance—one half being vividly congested, the other and terminal half being normal. The abdominal wall was sewed together by three or four salmon-gut sutures passing through the whole thickness of the abdominal wall. The recovery was uninterrupted, though the temperature, which before operation was subnormal, rose on the second day to over 102° F. The child was dismissed plump and well after five weeks' residence in the infirmary.

*Remarks by* Dr. MACARTNEY.—Recovery after this operation depends on the amount of injury that has been done to the intussuscepted portion of the intestine. The less injury that is inflicted on the serous covering of the bowel the less chance there is for the escape into the peritoneal cavity of intestinal fluid and the organisms therein. The more that serous covering is devitalised the more certain the cavity is to be invaded. Other similar cases which have come under my care divided themselves into two classes. The first group contained those that, after operation, remained in the condition of shock, never recovered either pulse or temperature, and simply "went on dying." They had received their lethal dose before ever they came to the operating table. The other group contained those in whom the temperature after operation immediately flies up to 104° F. or over, ending fatally after a few days. In this class there has been absorption of septic material not in such quantity as in the first group yet too much for the enfeebled life to overcome. The rapid rise of temperature is at once a proof of a large or virulent amount of poison and an effort on the part of the child to fight for the result. In short, it might be said that the success of this procedure depends almost entirely on the early recognition of the state of affairs and prompt action thereafter. On these points Dr. Todd is to be congratulated.

There is no method of treatment other than abdominal section that can be recommended. Inflation by air or water is at best a very doubtful means; it so rarely succeeds perfectly that operation has to be resorted to afterwards, and the shock which is caused by dilatation of the lower bowel, together with the time wasted in so doing, only lessens the margin of recovery on which the operator has to work.

# Medical Societies.

SOCIETY FOR THE STUDY OF DISEASE IN CHILDREN.—The provincial meeting of this society was held at the Radcliffe Infirmary, Oxford, on June 23rd.—Professor W. Osler was in the chair during the exhibition of clinical cases and pathological specimens and Dr. W. Collier when the papers were read.—Mr. A. P. Parker exhibited a boy with Dislocation of both Patellæ outwards.—Mr. H. P. Symonds exhibited a girl with a Solid Tumour of the Pelvis, probably enchondroma.—Dr. W. J. Turrell exhibited a well-marked case of Achondroplasia in a girl.—Dr. E. Mallam exhibited a child with Enlarged Liver and Spleen for diagnosis.—Dr. Mallam also exhibited three cases of Calf Ringworm and Miss Fitzgerald showed microscopic specimens and cultures from these cases.—Mr. G. Pernet exhibited Cultures of Ringworm from the Scalp and Nails.—Mr. P. H. Adams exhibited a case of Lamellar Cataract in which the patient also suffered from Ichthyosis Simplex.—Mr. Finch exhibited a well-marked case of Cretinism in a child.—Dr. R. H. A. Whitelocke exhibited a girl with Double Hernia of the Ovary whose sister had suffered from the same trouble and from whom one ovary was removed by operation and reported on at a previous meeting of the society.—Mr. A. P. Parker exhibited a specimen of Congenital Malformation of the Intestines in a Full-time Fœtus. In this specimen the stomach was normal but the duodenum was enormously distended and at the duodeno-jejunal flexure there was complete occlusion of the tube of the gut and the rest of the intestine was lying in a corkscrew manner with a small mesentery.—Dr. George Carpenter read notes of a case of Acute Osteomyelitis of the Spine in an Infant, a girl, aged one year. She looked ill and was anæmic and somewhat wasted. In the left loin there was a large smooth, rounded, and fluctuating swelling, dull on percussion and very tender. The child died six days after admission. The left pleura contained about two pints of purulent fluid. In front and to the left of the first, second, and third lumbar vertebræ there was a quantity of pus and the cavity communicated with the left pleura. Microscopical examination of the pus showed streptococci and diplococci. No tubercle was present.—Dr. E. C. Williams read some notes of a case of Congenital Heart Murmur in an infant, aged five months, suffering from an attack of whooping-cough.—Mr. H. P. Croly read notes of a case of Intussusception in an infant, aged nine months, successfully operated upon by Dr. Whitelocke at the Radcliffe Infirmary. The operation took place eight hours after the first symptom and it was found that the intussusception was of the ileo-cæcal variety.—Dr. B. M. H. Rogers read notes of a case of Acute Atrophy of the Liver in a boy, aged four years. When first seen he was distinctly yellow and was very sick and complained of abdominal pains. He became delirious and in lucid intervals complained of headache; the jaundice was now well marked. He died two days after admission. The liver was about the usual size and there was no obstruction to the flow of bile.—Dr. A. G. Gibson read a paper entitled "Some Observations on Enlarged Veins in Children." A large proportion of children taken to the out-patient department of any hospital suffered from loss of appetite, wasting, and general debility. Physical signs were, as a rule, few. In many of them, however, veins in various situations were more easily seen than in normal children. The commonest situation was on the front of the chest but they were found frequently on the back between the shoulder blades, under the chin, and on the temples. The veins were exceedingly small and were flush with the surface of the skin. These venous ramifications were not seen in all thin children, as, for instance, in the wasting that resulted from a cerebral tumour; hence it was probable that these veins were dilated. That in some there was venous obstruction was shown by the presence of dilated external jugular veins on one or both sides even in the upright position. On deep inspiration they did not collapse as did jugular veins in other subjects—e.g., a patient breathing deeply under an anæsthetic. Accurate records had been kept of 14 such cases showing as the cardinal sign dilated jugulars on one or both sides which did not collapse on inspiration. Of these, seven were male and seven were female; the age varied from four to ten years; a history of tuberculosis in the family was obtained in eight cases; the symptoms were either lassitude or wasting, or referred to the digestive or respiratory systems, such as frequent attacks of vomiting and diarrhœa and attacks of bronchitis or some form of chest trouble. The left jugular vein was enlarged in 14 and the right in 12; veins on the chest were visible in 13 cases, on the back in two, under the chin in two, and on the temples in seven. Downy hair on the back was found in six cases. The retraction murmur was present in ten. Small glands in the neck or elsewhere were present in nine cases. Tuberculous peritonitis was present in two cases while in a third the signs suggested a similar condition. Only in one case had it been possible to observe the anatomical condition under which the dilatation of the veins was produced. This was in a case of tuberculous peritonitis in which a dilated left jugular vein had been noticed for some time previous to death. A dissection of the anterior mediastinum showed a ring of small fleshy glands surrounding the left innominate vein. Sections made from one of the glands showed a few giant cell systems and tubercle bacilli. The posterior mediastinum in this case showed several hard caseating glands with large numbers of tubercle bacilli. The cases corresponded in character to those described as being

due to tuberculosis of the mediastinal lymph glands; and without implying that dilated jugular veins which did not collapse on inspiration were pathognomonic of such condition, it was suggested that in the presence of a tuberculous history, symptoms of debility, small glands in the neck, veins on the chest, back, neck, or temples, a retraction murmur, and in the absence of signs pointing to syphilis, lymphadenoma, or lymphosarcoma, the sign may be of value in the diagnosis of early tuberculosis.

# Reviews and Notices of Books.

*A System of Gynæcology by Many Writers.* Edited by THOMAS CLIFFORD ALLBUTT, the late W. S. PLAYFAIR, and THOMAS WATTS EDEN. Second edition. London: Macmillan and Co., Limited. 1906. Pp. 949. Price 25*s.* net.

DURING the ten years which have elapsed since the appearance of the first edition of this book such great strides have been made in gynæcology that it has been found necessary practically to rewrite the greater part of the present volume. More especially has this been the case in regard to the surgical portions of the work. The two articles, for instance, on ovariotomy and hysterectomy are entirely new and have been written by Professor J. W. Taylor and Professor H. R. Spencer. Additional surgical articles dealing with Antiseptic and Aseptic Technique by Dr. T. W. Eden, on Minor Operations on the Uterus by Dr. Amand Routh, on Vaginal Hysterectomy and Colpotomy by Professor Spencer, and on the After-treatment of Gynæcological Operations by Dr. G. E. Herman have been added. There are entirely new articles on the subjects of diseases of the ovaries and pelvic hæmatocele and the sections on chorion epithelioma and gonorrhœa are included for the first time. In the preparation of this new edition Professor Clifford Allbutt has enlisted the services of Dr. Eden.

The book maintains its main characteristics and presents very completely the current teaching of English gynæcologists of the more conservative type. One of the more important of the new chapters is that on Chorion Epithelioma, by Dr. J. H. Teacher and Dr. Eden. It contains a large number of excellent illustrations and embodies the important work carried out by Dr. Teacher on this subject. In the section on Pelvic Hæmatocele the notable plates first published by Professor Bumm in his "Grundriss zum Studium der Geburtshülfe" have been introduced, whilst the section on Extra-uterine Gestation by Mr. J. Bland-Sutton has been brought fully up to date. The article on Antisepsis and Asepsis in Relation to Gynæcological Surgery contains a clear account of the principles which should guide the surgeon in his choice of the various methods of attaining the desired results, while the practical details of the sterilisation of dressings and the surgeon's hands, and so on, are given in sufficient detail. Professor Taylor's article on Ovariotomy is one of the best in the book and those by Professor Spencer on the different operations of hysterectomy are most interesting. The latter is strongly in favour of the use of the electric cautery in the performance of vaginal hysterectomy and is inclined to attribute the bad results obtained after different methods of operating for carcinoma of the cervix uteri mostly to radical differences in operative technique, and he considers the most important point of all to be the avoidance of the local implantation of cancer cells. The question of the treatment of carcinoma of the cervix uteri by the extensive abdominal operations associated with the name of Professor Wertheim is discussed and Professor Spencer comes to the conclusion that the figures given by Wertheim indicate that a more complete removal of the growth is possible by the abdomen than by the vagina and that the increased number of cases free from recurrence after the abdominal operation is due, therefore, to freer removal of the growth.

The great importance of gonorrhœal infection of the female pelvic organs fully warrants the introduction of a special article on this subject. It is written by Dr. J. B. Hellier and gives a very good description of the results of gonorrhœal infection as they come under the notice of the gynæcologist. The important question as to whether we have in these cases to deal with an infection directly due to the gonococcus or to the associated action of other organisms is one about which there is still a great deal of dispute. Dr. Hellier appears to favour the view so strongly supported by Wertheim, that the gonococcus is itself capable of producing suppuration without any admixture with other pus-producing organisms. In the section on treatment, the abuse of the curette in dealing with these cases is justly condemned; as Bumm has pointed out the curette is a very poor weapon with which to make war on micro-organisms. Thus, if a recently married woman complains of dysmenorrhœa and menstrual excess we must carefully exclude the possibility of the cause being the gonococcus before proceeding to dilatation of the cervix or curettage of the body of the uterus. The great importance of allowing sufficient time for a cure to occur in cases of disease of the appendages due to the gonococcus before resorting to operative interference is insisted upon, and the dictum of Fritsch, that expectant treatment should be carried out for six months before an operation is thought of, is quoted with approval.

As we have said, the general tone of the work remains the same as in the first edition, and, as the editors point out in the preface, the friendly reader will perceive that although great progress can be recorded the lapse of ten years has left the conservative tendencies of British gynæcological practice to a large extent unchanged.

*Heart Disease and Aneurysm of the Aorta, with Special Reference to Prognosis and Treatment.* By Sir WILLIAM H. BROADBENT, Bart., K.C.V.O., M.D. Lond., F.R.S., D.Sc., LL.D., F.R.C.P. Lond., and JOHN F. H. BROADBENT, M.A., M.D. Oxon., F.R.C.P. Lond. Fourth edition. With 39 illustrations. London: Baillière, Tindall, and Cox. 1906. Demy 8vo, pp. xvi.–479. Price 12*s.* 6*d.* net.

THE new edition of this work is mainly from the hands of Dr. John F. H. Broadbent who has revised and rewritten the chapters on acute and malignant endocarditis and that on affections of the myocardium. Sir William Broadbent has, however, made several important additions to the chapters on angina pectoris and functional affections of the heart and has carefully revised the whole of the proofs. Thus the student of this interesting subject has the advantage of reaping the results of the labour of the younger man tempered with the more mature views of the veteran. The subject of the prognosis of heart disease has always been a favourite one with Sir William Broadbent, dating from the time when he was house physician to that great authority on the heart, Dr. Sibson of St. Mary's Hospital. The present work at its origin was for the most part a reproduction of Sir William Broadbent's Harveian and Lumleian lectures and was published at the frequently expressed wish of his old pupils. Since the first edition it has been amplified and further enriched by the assistance of his son, Dr. J. F. H. Broadbent.

The work opens with a chapter detailing the relations of the heart to the chest wall, an account of the movements of the heart, and an excellent *résumé* of the methods of the clinical examination of the organ. Next the pulse is fully considered and the term "arterial tension" as used by the authors is explained. We are glad to see that hypertrophy of the muscular coat is distinguished from arterio-sclerosis and we may mention that Sir William

Broadbent has never failed to find the former in the cases of granular kidney which he has examined. Diseases of the pericardium follow and here it is pointed out that the increase in the cardiac dulness observed is in the majority of cases due to cardiac dilatation and not so much to the effusion. The section on endocarditis is very complete. In the treatment of the malignant form not much stress is laid on the results that may be hoped for from antistreptococcic serum. Of course, there must be a certain amount of chance as to whether this will counteract the particular organism involved. Still, the only cases of recovery that we have known have been under the use of this remedy.

The account of valvular lesions comes next and is very complete. The attention of the student is directed to the valve affected and the relative danger of each particular lesion, and with respect to this the authors hold that as regards aortic stenosis the danger is greater than has been supposed and that although this lesion is not so serious as aortic incompetence or mitral stenosis yet it is more so than mitral incompetence. With regard to aortic regurgitation, when acquired late in life the prognosis is unfavourable, especially when it is due to syphilitic disease of the aorta invading the valves. Should aortic stenosis supervene in addition it may act as a palliative agent, the risk of undue dilatation being diminished when the patient is still young, so that further hypertrophy may take place. Mitral incompetence is held to be the least serious of all valvular affections, whilst mitral stenosis stands next to aortic regurgitation in the order of gravity. The account of the changes which the mitral murmur undergoes in mitral stenosis is one of the best with which we are acquainted. With regard to the vexed question of administering digitalis in aortic incompetence the writers hold that in the absence of mitral symptoms this drug can rarely be of service and may undoubtedly do harm.

In writing on the question of sudden death in heart disease it is pointed out, as regards valvular lesions, that aortic regurgitation constitutes the only dangerous lesion with respect to this catastrophe. The chapters on the prognosis of valvular disease embrace the whole subject very completely and will repay the most careful attention. With regard to the general treatment of the affections the indications for the Oertel and Schott method are judiciously set forth and in the section on the treatment by drugs the action of, and indication for, digitalis are clearly pointed out. We next come to the consideration of the structural changes in the heart—namely, hypertrophy and dilatation, both viewed generally and more especially with reference to their occurrence in the right ventricle. Some excellent plates illustrate the chapters on the diseases of the myocardium.

With regard to that serious disease, angina pectoris, it is pointed out that the distressing and agonising symptom pain is in truth a blessing in disguise, inasmuch as were it not for the warning thus given of an impending attack and the cessation of exertion thus enforced the patient would die suddenly without any warning. The explanation of Huchard—attributing the affection to ischæmia of the heart—is held to be the most satisfactory one yet advanced. The work concludes with an account of aneurysm of the aorta. Here space will only admit of our drawing attention to the opinions of the authors as regards treatment. The most important measure is rest; next the method of feeding, that is to say that the amount of liquid must be reduced to a minimum, the food must not be too bulky, and the states of repletion or depletion must be avoided. As regards drugs, iodide of potassium has been found to have an undoubtedly favourable action. Ergot, the use of which was practised by Sibson in large doses, diminishes the pulsation. The authors do not speak very favourably of Lancereaux's method by the injection of gelatin and do not recommend it. This we venture to think is rather too sweeping a condemnation of this means of treatment. Dr. Guthrie Rankin of the Seamen's Hospital has narrated some striking instances of the good results following the injection of gelatin. The authors recommend in its place the administration of chloride or lactate of calcium in addition to the limitation of the amount of fluids. In any case satisfactory results can only be expected when the aneurysm is saccular. In conclusion we can confidently recommend this interesting work as affording very useful lessons to the student of cardiac pathology.

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*International Clinics.* Edited by A. O. J. KELLY, A.M., M.D., Philadelphia, U.S.A. Vol. III. Fifteenth Series. 1905. London and Philadelphia: J. B. Lippincott Company. Pp. 302.

THIS volume contains 23 papers on various subjects grouped under the headings of Treatment, Medicine, Surgery, Neurology, Dermatology and Syphilis, Rhinology, Ophthalmology, and Pathology. Many of them are of the nature of clinical lectures and contain a useful *résumé* of the current views on the subject dealt with, embodying the author's experience without containing anything strikingly novel, but in not a few some original observations or practical suggestions are set forth. Space will not permit more than a passing reference to some of the more important of these. Dr. George C. Johnston of Pennsylvania contributes a copiously illustrated article on the Therapeutic Uses of the Roentgen Rays or Radiotherapy, which he presents in a sanguine light for the treatment of a variety of skin diseases and malignant disease, concluding with a number of aphoristic recommendations. Detailed practical instructions for the application of the treatment are given. Dr. Albert Robin of Paris, in a short paper on the Action of Metallic Ferments on Metabolism and their Effects in Pneumonia, brings forward some remarkable observations of somewhat heterodox character. It has been stated by Bredig and others that very weak solutions of certain metals prepared by electrolysis possess certain reactions like organic diastases and that these reactions are capable of acceleration or inhibition by agencies exerting similar actions on organic ferments. After injecting these dilute solutions into man, Dr. Robin concludes that metals in extreme subdivision are capable of exerting remarkable physiological actions out of all proportion to the amount of metal used, including an increase in nitrogenous metabolism, an augmented output of urinary indoxyl, raising of the arterial tension, and marked changes in the blood corpuscles. He is of opinion that such metallic solutions are destined to take an important place among therapeutic agencies. Dr. Robin gives very few details of his experiments so that it is impossible to criticise his results.

Dr. Henry Huchard of Paris supplies an interesting summary of the musculo-tonic and diuretic actions of formic acid and the formiates and although he does not subscribe to all the remarkable claims of Clément of Lyons in regard to their actions he is of opinion that these drugs have a powerful musculo-tonic action and he gives records of experiments with the ergograph demonstrating this. He further finds that the urinary excretion is rapidly and very markedly increased, notably the amount of urea. Professor Teissier of Lyons in an interesting article on the Opotherapic Treatment of Renal Insufficiency gives some noteworthy observations on the use of various extracts and preparations of renal tissue in the treatment of certain diseased conditions of the kidney. The preparations used were glycerine extracts of kidney tissue and the pulp of the entire organ macerated. The serum from the blood of the renal veins of animals was also tried. Professor Teissier states that carefully used renal opotherapy affords a useful adjunct

to other means of treatment in renal inadequacy. Professor Alexander M'Phedran of Toronto recommends in the treatment of membranous colitis rest in bed and measures directed to allay the sectional spasm of the colon to which he states the pain is due. For this purpose he gives in severe cases a hypodermic injection of morphine followed by the administration of copious enemata. Dr. F. Parkes Weber and Mr. E. Michels of London record an interesting case of primary carcinoma of the extra-hepatic bile-ducts with severe jaundice, which was relieved by biliary drainage through the operation of intra-hepatic cholangiostomy.

In the section of surgery an apparatus is described by Dr. M. Brockeart of Ghent for the injection of paraffin by the "cold" process whereby certain disadvantages of the method are overcome. Dr. Thomas D. Luke of Edinburgh contributes a careful paper on the Use of Ethyl Chloride as a General Anæsthetic, with references to the fatal cases hitherto recorded. Dr. A. Rose of New York describes the use of carbonic acid gas in rhinitis which he considers to be a remedy of the first order in the initial stage of that disease and one capable of ameliorating the intensity of the symptoms in all forms.

Professor Richard Kretz of Vienna, in an interesting communication on the pathology of cirrhosis of the liver, comes to the conclusion that the essential and initial changes are parenchymatous in origin, and that the condition is to be regarded as a "recrudescent, chronic degenerative process of the liver, retarded by ingrowths of regenerating tissue."

This volume of the series of "International Clinics" worthily maintains the reputation achieved by its predecessors and constitutes a suggestive addition to current medical literature.

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*Précis de Laryngologie Clinique et Thérapeutique: Maladies du Pharynx et du Larynx.* Par le Dr. P. LACROIX, Membre de la Société Laryngologique de Paris. With 182 figures in the text. Paris: F. R. de Rudeval. 1906. Pp. 620. Price 8 francs.

IN spite of the special attention paid to the study of diseases of the throat there is no work on laryngology which is at the same time elementary and complete from the point of view of the student and the medical practitioner. Dr. Lacroix proposes to fill this gap by his "Précis de Laryngologie." The work comprises four parts. The first part is devoted to the general technique of pharyngoscopic, laryngoscopic, tracheoscopic, and bronchoscopic examination, and the diagnosis and treatment of laryngological affections. The second part deals with the pathology of the pharynx, and the third with that of the larynx and subglottic region. In the fourth part, which is entitled "Syndromes Laryngiens," the author considers the symptomatology of laryngeal dyspnœa, hæmoptysis, guttural cough, dysphagia, and affections of the voice and of speech. It is a complete synthesis of the two preceding parts.

"Essentially practical" must be the verdict of those who study this book. It is intended for practitioners and students, and is sufficient for both. The descriptions are clear, the reasoning is sound, and the directions are lucid. It is freely illustrated, the illustrations being essentially diagrammatic in character and the diagrams for the most part extremely good; but as it is occasionally impossible to convey by means of pen-and-ink diagrammatic sketches a clear conception, some of them are failures. As examples, we may take the sketch of acute tuberculosis of the isthmus of the pharynx and the lips of the uvula, and voluminous granular papilloma of the lingual tonsil. The book is a cheap and useful guide to the study of laryngology and we believe that it will have a wide circulation.

## LIBRARY TABLE.

*A New Species of Trypanosoma found in the Blood of Rats together with a New Metrical Method of Standardising the Measurements of Trypanosomata.* By Professor A. LINGARD, M.B. Durh., D.P.H. Cantab., Imperial Bacteriologist to the Government of India. *Through what Agency is the Trypanosoma Evansi carried over from one Surra Season to another?* By the same author. From the *Journal of Tropical Veterinary Science*, Vol. I., No. 1, January, 1906. Calcutta: Thacker, Spink, and Co.—The author observed some years later than July, 1877—the time at which Lewis detected flagellate organisms in the blood of apparently healthy rats—parasites intermingled with the trypanosoma Lewisi which appeared to possess a flagellum at either extremity. He was unable, however, with the imperfect method of staining flagellates then in use to demonstrate the hæmatozoa in specimens teeming with the recognised forms. During the past year he has again observed what appears at first sight to be a variety of trypanosoma, to which he has provisionally given the name of "trypanosoma Longocaudense." He has found this in many varieties of rats, never alone in the circulation but always concurrently with other well-recognised species of trypanosoma. Professor Lingard details the chief peculiarities of this form of organism immediately differentiating it from the trypanosoma Lewisi and has manifestly discovered a new species. In this interesting paper Professor Lingard gives a system of measurements of the several varieties of trypanosomata met with in the districts in which he has worked, a method which he has devised in order that some system of comparison of the mean measurements could be more easily made. He makes use of five measurements of different parts of the organism which, when severally added together, give the total length of the parasite. For the sake of comparison the mean of each of the five measurements of a large number of trypanosomata of any one species is first taken and later the percentage value of each measurement is calculated, taking the mean total length of the parasite as 100. The paper concludes with examples of measurements of the different varieties of trypanosomata. In the second paper Professor Lingard brings forward a question of considerable importance and interest to the owners of horses and cattle in India—namely, What is the agency called into requisition to allow the causal agent to be dormant from the termination of one surra season to the commencement of the next, and then to spring again into activity? for it is known that the usual type of surra in equines is fatal to these animals in a period of a few days to a maximum of two or three months. The author has for some time conducted an extensive series of experiments with the above object in view, the collated results of which have not hitherto been published. Spontaneous equine surra in the East has always been found to be an absolutely fatal disease due to the presence of the trypanosoma Evansi in the circulation of the affected animal and the period during which the malady runs its course is influenced by the strains of the hæmatozoon and also by the resistance offered to it by the affected animals respectively. Professor Lingard's researches demonstrate the following results: that in bovines when once the fatal form of the disease is established a rapid dissemination may occur through the agency of several species of flies; that in the case of camels different species of flies, Tabanidæ, Hippoboscidæ, and so on, play an important part in the dissemination of the disease, whilst in some instances the Hæmatopinus would appear to be the intermediate host by which the flagellate is conveyed from camel to camel; and that canines may help to bridge over a portion of the period during which the disease is not observed in equines and which is usually looked upon as the dormant season. The paper in question is a very

valuable one and is a proof of the good work carried on at the laboratory at Muhktesar by the author.

*Geschichte der Geburtshülfe.* (*History of Midwifery.*) By Dr. HEINRICH FASBENDER, Extraordinary Professor of Medicine at the University of Berlin. Jena: Gustav Fischer. 1906. Pp. 1028. Price 25 marks.—This monograph, the result of more than ten years' study of the subject by its author, will long remain, as aptly it has been termed by a German reviewer, a master work on the history of this branch of medicine. Professor Fasbender has set himself the task not only of revising the history of midwifery up to the time of the appearance of the first edition of Ed. Casp. Jac von Siebold's great work (1839) but also of completing it up to the present time. As he remarks in his preface, not only has the amount of material very markedly increased but modern methods of historical research are much in advance of those prevalent at the date of the appearance of von Siebold's work and the results obtained are correspondingly greater. The book consists of two main portions. The first, comprising 398 pages, gives a general survey of the history of midwifery, while the second, of some 600 pages, contains a special account of the history of midwifery from the middle third of the eighteenth century up to the commencement of the twentieth century. The author has been led to make this artificial division of the subject because at about the middle of the eighteenth century midwifery first became recognised as a separate branch of medical science, as distinct from general medicine and surgery. With the great advances which took place at this period in the practice of this specialty both the science and the art of obstetric medicine made considerable strides and these developments were accompanied by a very large increase in the amount of literature dealing with the various divisions of the subject. The second part of the book contains the history of the physiology and the dietetics, the pathology and the treatment, of pregnancy, labour, and childbed, and ends with a historical review of the various operations of midwifery. Professor Fasbender's fitness for the task which he has set himself has been amply demonstrated in his well-known work "Entwicklungslehre, Geburtshilfe und Gynaekologie in den Hippokratischen Schriften." Just as this previous work excels all its rivals in its clear presentation of the subject, sobriety of judgment, and in the widespread range of knowledge of the literature which it shows its author to possess, so the present monumental work, the outcome of a colossal amount of research and labour, must for the same reasons long remain the standard work of reference for all writers in this interesting field of medical history. It is a pity that the publishers have not issued the book in two volumes instead of one, as it is of inconvenient size, and the interest of the letterpress would have been much enhanced by the introduction of some illustrations.

*La Guerison de la Tuberculose (The Cure for Tuberculosis).* By Dr. PAUL FERRIER. Paris: Vigot Frères. 1906. Pp. 184. Price Fr. 2.50.—In this publication the author proclaims yet another special method of treatment for tuberculosis and explains the principles on which it is based. The keynote of the treatment is *calcification*. He starts from the pathological fact that healed tuberculous lesions undergo a process of calcification. From this he deduces that the difference between those patients who are able to withstand and to overcome the disease and those who succumb to it lies in the power of calcification of the former and his line of treatment consists in measures such as the administration of calcium salts, which should increase that power, and in the elimination of all factors which, in the opinion of the author, tend to diminish the power to calcify or actually to set up the opposite condition of decalcification. Insufficient power to calcify or a process of actual decalcification is supposed to be due either to a deficient supply of calcium salts in the food, such as may occur in those districts in which the water supply lacks absorbable calcium salts, or to an excessive formation of acids in the system. According to Dr. Ferrier this supposed excess of acids in the system is chiefly caused by imperfect processes of digestion, leading to fermentation in the stomach with the formation of lactic and other organic acids. In consonance with this theory, therefore, the author puts his patients on a rigid diet, consisting chiefly of meat and bread and a small amount of vegetables. All acid ingredients, such as vinegar and lemon juice, are to be avoided and alcohol and fats are especially condemned as they paralyse the motor activity of the stomach and lead to stagnation and fermentation of the gastric contents. The meals must be so limited in amount and at such intervals that the stomach is completely emptied after each meal. This purpose is further aided by the administration of a glass of St. Galmier water half an hour before each meal. In addition, calcium salts are prescribed in cachets to be taken three times a day. The fundamental idea that a high degree of calcifying power may be an important factor in the healing of a tuberculous focus is itself suggestive and appears to open up fresh fields for careful investigation and research, but no one except the enthusiastic author of such an idea is likely to regard this ability to calcify as anything more than a possible factor in the highly complex processes involved in the reaction of the organism to the disease. As in the case of any other treatment Dr. Ferrier is, of course, able to cite a few cases in which his treatment has been followed by a rapid disappearance of all signs and symptoms of the disease, but there is a singular lack of any other attempt to support his views by a careful examination of facts and by serious research. It is an armchair theory without any adequate endeavour to test its value in the laboratory or the hospital, except by applying the deductions from it forthwith to the treatment of the disease. It is true that the author carried out a few experiments on guinea-pigs infected with tubercle but they did not lead to any definite conclusions. For the rest the theory is backed up by dogmatic statements and casual observations.

# New Inventions.

## THE "WITCH" DUST EXTRACTOR.

THE removal of dust from carpets, hangings, and furniture by means of the broom or brush is opposed to sanitary ideals. Such a method merely effects at its best the dislodgment of dust from one place only to fall upon another. In short, the carpet may be cleaned and may look brighter for the process, but the dust is only scattered and sooner or later appears elsewhere, as, for example, upon the mantelpiece, bookshelves, or pictures in the room. Moreover, the broom by no means removes the dust perfectly even from the carpet to which it is assiduously applied. At any rate, when suction is applied to the swept carpet a good deal more dust is seen to be extracted. This is very well illustrated in the application of the simple dust extractor known as the "Witch," a model of which has recently been submitted to us for trial by the Witch Dust Extractor Co. of Temple Row, Birmingham. The way in which this appliance works will be readily understood from an inspection of the accompanying illustration. It consists of a pair of exhaust bellows worked by foot to which is attached a length of hose and in its turn an "extractor" shaped like a flattened out speaking-tube. On working the bellows a strong suction takes place at the mouth of the extractor which rapidly withdraws the dust from the carpet over which the extractor travels. Some idea of the force of the suction may be gathered from the fact that ordinary pins find their way into the receptacle for the dust which is contained in the exhaust chest of the apparatus.

When fine flour is well rubbed into a carpet, even of heavy pile, the flour is completely removed. In the exhaust chest and connected with the hose is a detachable linen bag which serves to retain the finest dust as it is pumped from the carpet into the machine. The collection of "muck" in this bag is a revelation as to the filthy character of the dust which accumulates on the carpet. The dust is thus collected and not scattered and consequently

there is no need to cover up the ornaments and pictures in a room Of course, the machine cannot be worked without expending some energy upon it but in practice it is said that servants prefer this kind of labour to the use of the broom and the result is much more satisfactory and decidedly cleaner in its application. This system threatens to do away with the unscientific and clumsy method of sweeping the carpet, and those who have any care at all for the application of sanitary measures in the house will express no regret that such is the case.

## BRITISH MEDICAL BENEVOLENT FUND.

AT the monthly meeting of the committee, held on June 19th, 21 cases were considered and sums amounting to £301 were voted in relief to 20 of the applicants. A legacy of £1000 was announced from the late Mr. Thomas Corbett, M.R.C.S. Eng., L.S.A., of Droitwich. Mr. George Eastes, M.B. Lond., F.R.C.S. Eng., was elected a member of the annuity sub-committee. Appended is an abstract of the cases relieved.

Widow, aged 53 years, of L.R.C.P., L.R.C.S. Irel. who practised in Birmingham and who died six months ago after some years of ill health which exhausted his means. No children. Recommended by Dr. I. G. Modlin. Voted £5 in one sum.

Wife, aged 43 years, of M.B., C.M. Glasg. Was deserted by husband some years ago and has supported herself since by letting lodgings but has been obliged to incur some small debts. Recommended by Dr. G. T. Beatson, honorary local secretary. Voted £5 in one sum.

Daughter, aged 62 years, of late L.S.A. who practised in Bucks and in London. Has maintained herself for several years as a housekeeper but is now unable to obtain a post. Recommended by Mrs. Snell. Voted £10 in two instalments.

Widow, aged 29 years, of L.R.C.P. Lond., M.R.C.S. Eng. who practised in Poplar. Quite unprovided for at death of husband a few months ago and had to sell furniture to pay funeral expenses and debts the death vacancy only realising £25. Has one child under two years of age and is at present living with her father but hopes shortly to obtain a situation. Recommended by Mr. Malcolm A. Morris, vice-president, Mr. H. W. Page, vice-president, and Dr. H. A. Caley. Voted £10 in two instalments.

Widow, aged 55 years, of L.S.A. who practised as a locum-tenent. Practically unprovided for at husband's death two years ago. No children. Health indifferent. Recommended by Mr. F. H. Knagge. Voted £5 in one sum.

Daughter, aged 36 years, of M.D. Glasg. who was a surgeon in the Royal Navy. Applicant lost both her parents before she was three years old and has supported herself as a nurse for several years but is now ordered at least a year's rest on account of ill health. Recommended by Dr. W. J. C. Merry, honorary local secretary. Voted £12 in 12 instalments.

Widow, aged 65 years, of M.D. Edin. who practised in Lincolnshire. Income less than £10 a year. Children unable to help and applicant is in feeble health. Relieved twice, £17. Recommended by Sir Hickman Bateman, Bart. Voted £10 in ten instalments

Daughter, aged 60 years, of late L.S.A. who practised for 50 years in a town in the North of England but lost his means through unfortunate investments. Has a small annuity from the North of England Governesses' Society. Tried to keep a lodging-house with a sister but was unsuccessful and had to sell a portion of the furniture to pay debts. Relieved eight times, £72. Recommended by Dr. C. J. Gibb. Voted £10 in two instalments.

Widow, aged 55 years, of M.B., C.M. Edin. who practised in Lancashire No income; small earnings from needlework, but finds difficulty in obtaining orders. A little help from son, aged 22 years, earning 25s. a week as a clerk. Relieved three times, £36. Recommended by Dr. Claud Muirhead. Voted £12 in 12 instalments.

Daughters, aged 48 years and 43 years, of late L.R.C.P. Lond., M.R.C.S. Eng. who practised in Wales. No income; endeavour to maintain themselves by knitting in the winter and by letting lodgings in the summer, but last year had an extremely bad season, only having their rooms occupied for seven weeks. Relieved seven times, £75. Recommended by Dr. F. T. Roberts, vice-president. Voted £12 in 12 instalments.

Widow, aged 43 years, of L.R.C.P., L.R.C.S. Edin. who practised in Essex. Six children, aged from 20 to 11 years, the four eldest being clerks earning a small weekly salary. Endeavours to keep a home for the family by the help of the sons and by taking a couple of boarders, one of whom has just died. Relieved three times. £36. Recommended by Sir Lauder Brunton, vice-president. Voted £12 in 12 instalments.

Daughter, aged 43 years, of late M.D. Edin., F.R.C.P. Edin. who was a university lecturer and examiner in midwifery. Has been in bad health for several years past but until recently was able partially to support herself; has now been quite incapacitated for some months and is dependent on a grant from the Royal College of Physicians of Edinburgh and the help given by this fund. Relieved eight times, £70. Recommended by Dr. Joseph Bell, honorary local secretary. Voted £12 in 12 instalments.

Daughter, aged 36 years, of late F.R.C.S. Eng. who practised in Bedfordshire. Has been laid up for more than a year with hæmatemesis and phlebitis and is only just beginning to walk about again. Dependent on mother whose income is less than £1 a week. Relieved six times, £50. Recommended by Mr. G. Rice Ord. Voted £10 in ten instalments.

Daughter, aged 57 years, of late M.D. Edin. who practised in Devonshire. No income. Is allowed a small weekly sum by a brother but owing to constant ill health for the last three years it is not sufficient for absolutely necessary expenses. Relieved once, £10. Recommended by Dr. R. H. Paramore. Voted £5 in one sum.

Widow, aged 51 years, of L.R.C.P., L.R.C.S. Irel. who practised in London. No income. Has endeavoured to support herself by maternity nursing for several years but is now nearly blind. Relieved four times, £41. Recommended by Mr. J. P. Pennell. Voted £12 in 12 instalments.

Daughter, aged 46 years, of late M.R.C.S., L.S.A. who practised in Lancashire. No means and unfitted for permanent employment by epilepsy and general ill health. Relieved three times, £36. Recommended by Dr. A. M. Edge, honorary local secretary. Voted £12 in 12 instalments.

Widow, aged 41 years, of L.R.C.P., M.R.C.S. who practised in London. Was practically unprovided for at husband's death and for seven years has been housekeeper for a medical man who is now about to marry. Three children, aged 17, 16, and 15 years respectively, one being very delicate after rheumatic fever. Applicant proposes to take a small house to receive boarders and is promised every possible help by several medical men of her acquaintance. Relieved three times, £25. Recommended by Dr. James Galloway. Voted £15 subject to £45 being raised by her friends.

Widow, aged 45 years, of L.R.C.P., L.R.C.S. Edin. who practised in Sheffield. No income, and dependent on a son, aged 19 years, earning 18s. a week as a labourer, another son having just married, and a daughter, aged 16 years, having been obliged to give up work on account of ill health Relieved eight times, £99. Recommended by Dr. W. Dyson. Voted £10 in ten instalments.

Widow, aged 58 years, of M.D. St. And. who practised in London. No means. Lets lodgings but has only one of her rooms occupied. Children unable to help. Relieved twice, £24. Recommended by Dr. G. Fielding Blandford. Voted £12 in 12 instalments.

Widow, aged 76 years, of M.R.C.S., L.S.A. who practised in Bucks. Four children, aged from 43 to 39 years, but three are deaf and dumb, and one epileptic also; the fourth is a teacher but at present has no post. Applicant has a small income but it is not sufficient for the maintenance of herself and her afflicted family Relieved four times, £30. Recommended by Dr. A. Playne. Voted £10 in two instalments.

LEPROSY IN NEW SOUTH WALES.—The report of the New South Wales board of health on leprosy for the year 1905 has just been issued. It is signed by Dr. J. Ashburton Thompson, president of the board and chief medical officer to the Government of the State. On Jan. 1st, 1905, 17 persons remained under detention at the lazaret. During the year 12 persons were reported as being suspected lepers and of these seven were ultimately admitted to the lazaret. Two patients died during the 12 months under notice, one a native of New South Wales of European parentage and the other a native of England. An appendix attached to the report shows that the total number of persons admitted since 1883 when patients first began to be received is 103. Distributed under nationalities the account stands as follows: natives of New South Wales, 27, of whom 18 have died and 3 were released; of Queensland, 1, deceased; of England, 6, of whom 4 have died; of Ireland, 4, of whom 2 have died; of New Zealand, 1, deceased; of Fiji, 2, of whom 1 has died; of Germany, 2, deceased; of Belgium, 1, deceased; and of the United States of America, 1; all of these were whites of European descent. There were also 43 natives of China, of whom 14 have died and 29 have been returned to their own country; of India, 2, deceased; of the West Indies, 1, discharged in 1885; of Java, 1; of the Pacific Islands groups, 8, of whom 1 has died and 1 has been returned to his island; of New Caledonia, 1, deceased; of Zanzibar, 1, sent with Chinese to Hong-Kong at his own desire; and of Egypt, 1, repatriated; all of these were coloured people.

# THE LANCET.

*LONDON: SATURDAY, JULY 14, 1906.*


## Medical Attendance on the Working Classes.

THE very interesting and important paper by Dr. J. H. KEAY on Medical Attendance on the Working Classes, which was published in THE LANCET of July 7th, p. 15, is well calculated to direct attention to the actual conditions of a pressing and important problem which, as Dr. KEAY rightly declares, can only be solved by medical men themselves. It has been more or less coquetted with by philanthropists for many years and the general result of their endeavours has been to bring about a condition upon which it is impossible to congratulate any of the persons chiefly concerned, the public, the poorer patients, or the medical profession. In the metropolis according to figures attributed by Dr. KEAY to Sir HENRY BURDETT, some 2,000,000 of people, or roughly something like half the population, annually receive gratuitous assistance from hospitals or dispensaries. Without here discussing Sir HENRY BURDETT's authority for this figure, it cannot with any degree of probability be maintained that even a majority of 2,000,000 Londoners would be unable to pay a fee to a medical man. In provincial towns and rural districts the operations of hospitals are probably more strictly confined to suitable applicants, and the needs of the industrial populations are met by clubs and other organisations, some of them concerned with medical relief alone; while in others the medical relief is only one part, though always an important part, of the general operations of a society or an association. In the enormous majority of cases, moreover, it cannot be said that the payments made by members to their clubs, on account of medical attendance, or the payments made by the clubs to their medical officers, at all adequately represent the value of the services rendered, or the amount of work which these medical officers are called upon to perform. In certain rural districts the holding of club appointments, and even of Poor-law appointments, forms a traditional part of the natural functions of leading practitioners in the locality; but in towns the tendency is not necessarily in the same direction. It in no way follows that those who hold these offices may not be as capable or as conscientious as their neighbours, but the fact remains that they may not possess so high a local reputation; and their patients are often keenly alive to this circumstance and quite ready to avail themselves of it as an excuse, if not as a justification, for the slenderness of the payment which the "club doctor" is often forced to accept. In some cases, as our readers are only too well aware, clubs founded for the ostensible purpose of affording medical relief to the poor have been extended to embrace persons who could not be so described; and these clubs have been conducted by the aid of active canvassing which has rendered them exceedingly injurious to the practitioners of the vicinity, whose patients, although well able to pay customary charges, have been tempted away by the bait of a small subscription and by the asserted merits of the medical man who has been secured, at the cost of a modest salary, to devote his skill to the healing of club members. Action of this kind has to a great extent been checked by the determination of the General Medical Council to regard the proceedings of the medical men connected with such clubs as "infamous in a professional respect," but there are undoubted difficulties attending such a settlement of the question. Dr. KEAY, however, utters a timely warning to the effect that medical men should be very careful in assuming or approving any position which may be interpreted as that of a trade rather than of a profession, or which might lead to the forfeiture of the high reputation for unselfishness which has been handed down to us by many generations of illustrious predecessors. He feels, and all, we think, must admit, that some of the most conspicuous of medical "reformers" have not always been sufficiently careful to keep themselves above suspicion in this respect.

The example of Germany is quite sufficient to show that it would be well within the powers of the industrial classes of Great Britain to support, and well within the powers of the medical profession to organise, a scheme of medical relief which would be far more effective than the present want of system as regards the sick, and far more satisfactory to the practitioners concerned in its administration. A serious impediment in the way is the abysmal, but we hope not the invincible, ignorance of the classes from whom the patients must be derived. The chief difficulties of treating the illnesses of the British workman, of his wife, and of his children are dependent upon the filthiness of the dwellings and persons of the patients and upon their frequent refractoriness to orders concerning rest, food, and other essentials. We want to see in our industrial districts a sufficient establishment of cottage or workmen's hospitals to which every local practitioner could send his patients and remain in attendance upon them, obtaining an increased average of successful treatment, and a shortened average duration of illness, from the conditions of an institution which would be largely educative in its character, and which would give a blissful experience of clean clothing, clean bedding, and clean food, to all the sick persons who were fortunate enough to find admission within its walls. Hospitals for the members of their body are maintained by the working classes in Germany, and their maintenance would be quite within the means of the same classes in this country. We believe that a start might be made, by the assistance of a combined effort on the part of the local medical practioners, in any district in which labour was sufficiently abundant for the formation of large clubs, in which there were a few enlightened and influential employers who would assist with advice and perhaps with a certain portion of the preliminary outlay. We have no doubt that such cottage or workmen's hospitals would soon justify their presence and would afford full compensation for the cost of bringing them into existence. Their institution would abbreviate illnesses,

would lighten the load of sick pay, and would become a centre of sanitary education in their district. They would materially assist practitioners, not only by placing the sick in conditions favourable to their recovery but also by bringing them together in a convenient place and thus diminishing the labour of attendance upon them.

Dr. KEAY contemplates a possible extension of the principle of the Education Acts to illness and a provision of free medical treatment for the sick at the expense of public funds, either local or imperial. The late Sir BENJAMIN WARD RICHARDSON was fond of speculating upon such a possibility and often said with how much pleasure he would be content to be paid by the State and not by the patients who required his services. Something might perhaps even be urged on behalf of the Chinese system, under which the patient, according to tradition, pays a regular stipend to his medical adviser when in health, suspending payment when illness falls upon him. But in either plan difficulties might arise in bringing it into practical application. Under the system of State payment a popular medical man would have difficulty in defending himself against the attacks of importunate patients and might often be called upon for exertions beyond his powers. Under the Chinese system the medical man would at least require to guard himself against illnesses caused by excesses or insanitary practices and would rightly demand a large amount of control over the habits and proceedings of his flock, a far larger amount than he would ever obtain. For the present, at least, we are more likely to continue in this country upon the lines traced out for us by experience, and the problem before us is to find a means of so combining the possible payments of the comparatively poor as to make them into an aggregate sufficiently large to bear the cost of the aggregate of sickness falling upon the contributors. We believe that this object might be accomplished by a better and more intelligent adaptation of the club system, especially with the aid of a hospital system such as that which we have indicated above. We may, at all events, hope that the difficulties of the case will tend to diminish as time goes on, and that education will some day produce results in the shape of better national and individual sanitation, with a corresponding decrease of the burden which sickness now casts upon all classes of the community.

## The Royal Victoria Infirmary, Newcastle.

ON Wednesday, July 11th, the Royal Infirmary, Newcastle, ceased an honourable existence of over 150 years and was re-born as the Royal Victoria Infirmary. His Majesty KING EDWARD VII. opened the new buildings in person and the stately ceremony, to which we just allude in another column, went to make the occasion one which should be memorable for ever in the old city of Newcastle. The history of the Newcastle Infirmary is of more than local interest, for it is, with the exception of the few hospitals in these islands the foundation of which dates from mediæval times, that of practically every hospital in the land. Founded during the eighteenth century to cope with the needs of a small town of some 20,000 inhabitants it gradually became obliged to minister to the afflictions of the body inseparable from the daily toil of a huge industrial community, and in a book now before us,[1] a copy of which has been accepted by the KING, Dr. GEORGE HALIBURTON HUME has compiled a complete account of the rise of the infirmary, its trials, its successes, and its growth. "The onlie begetter" of the Newcastle Infirmary is as mysterious as is "Mr. W. H." and, like him, is known solely by initials—namely, "B. K." Over these initials there appeared in the *Newcastle Courant* of Jan. 5th, 1751, a letter which commenced as follows:—

"At a Time when so noble a Spirit of Charity is stirring amongst us, and, to the Honour of this Age and Nation, such great Encouragement is given to all charitable Foundations; when we see particularly Hospitals for the relief of the Sick Poor, which, of all the various Kinds of publick Charity, deservedly claim the first Rank, erected in almost all the large Towns in this Kingdom: That no such thing should ever be set on foot in this Town, is, I think, not a little strange and extraordinary.

"Certainly, if in any Place, London excepted, an Establishment of this kind is necessary, it must be so here. For where are there so great Numbers of Poor employ'd, or their Employments more dangerous, than in and about this Neighbourhood?"

The letter then goes on to plead for a hospital and the result was that in May, 1751, a house in the Gallowgate which had been hired was opened, after a religious service conducted by the Archdeacon of Northumberland, as an infirmary, when seven in-patients and four out-patients were admitted. The staff was as follows: Dr. ASKEW, Dr. COOPER, Dr. JOHNSON, and Dr. LAMBERT as physicians, while the surgeons were Mr. SAMUEL HALLOWELL and Mr. RICHARD LAMBERT who, if not "B. K.," is generally supposed to have instigated the writing of the letter. The chief provision previously to the opening of the Gallowgate Infirmary for the needs of the poor had been supplied by the "worthy Magistrates of the Town" who had allowed £80 per annum to four surgeons to visit the poor. After the starting of the infirmary the corporation gave a site for the erection of a permanent building, together with a donation of £100, but the £80 were reduced to £40. The foundation stone of the first permanent building was laid by Dr. BUTLER, the Bishop of Durham, on Sept. 5th, the site being then in the open fields.

Like most other hospitals in the eighteenth century and earlier, the infirmary was founded to improve the moral conditions of the patients as well as the physical, and in a set of rules dated 1801 patients were told that when they are "discharged cured they shall be strictly enjoined by the Chairman of the Committee, to return thanks to Almighty GOD in their respective places of worship and to the subscribers who recommended them." This formula was common to nearly all hospitals some hundred years ago, but an instance came under our notice showing that a modern spirit of materialism is growing up. At a hospital of ancient and pious foundation the patients were recently told that if cured they were to return thanks to GOD "and in any case, to the subscriber who gave them the letter"—a comically worded notice which has since been altered. Like other hospitals, too, the Newcastle

[1] The History of the Newcastle Infirmary, by George Haliburton Hume, D.C.L., M.D. Edin., F.R.C.S. Edin., Consulting Surgeon to the Royal Infirmary; price 10s. 6d., pp. 148, with portraits, plans, and other illustrations; Newcastle-upon-Tyne, Andrew Reid and Co., Limited, 1906.

Infirmary has from the time of its inception been confronted with the problems arising from overcrowding and from an insufficiency of income fully to provide the money for expenses. 50 years after its foundation—namely, in 1801—it was reconstructed and enlarged. Another 50 years went by and again a new wing was built called the Dobson Wing after JOHN DOBSON, the architect. In 1875 Dr. G. T. BEATSON, a recently qualified and enthusiastic disciple of LISTER, was appointed house surgeon and the antiseptic system of surgery, then on its trial, was introduced into the hospital under very favourable auspices. Dr. BEATSON, now surgeon to the Western Infirmary, Glasgow, was able to give first-hand information on all the details of technique, and so good was the result upon the surgical work of the hospital that the overcrowding became worse than ever, for patients flocked to obtain the benefits of the new method of treatment. Accordingly in 1885 a nominally temporary block of 50 beds was opened under the name of the Ravensworth Wards. This lasted for more than 20 years, when the Royal Infirmary entered upon its present stage. In 1896 the then Mayor, Mr. (now Sir) RILEY LORD suggested that the building of a new infirmary would be the best memorial of the sixtieth year of the reign of Her Majesty Queen VICTORIA that could be. Ably seconded by his fellow citizens he set himself to raise the sum of £100,000 and by the date of the Diamond Jubilee this sum had been secured, £20,000 of it having been contributed by the working classes.

Thus were laid the beginnings of the magnificent building which was opened on Wednesday by our KING. The work has not been without its difficulties. The question of a site was settled by the gift by the city of a plot of land near the Leazes but the question of more funds remained. Mr. JOHN HALL, however, in July, 1897, offered a sum of £100,000 as a contribution towards building and equipment, while in March, 1901, Mr. W. WATSON-ARMSTRONG (the present Lord ARMSTRONG) and his wife offered another £100,000 in memory of the late Lord ARMSTRONG. Thus all difficulties were overcome and in August, 1901, a contract was signed at a cost of £203,527 not inclusive of the engineering contract. The architects are Mr. W. L. NEWCOMBE and Mr. PERCY ADAMS, and perusal of Dr. HUME'S book, to which we have already referred, as well as the columns of all the local newspapers, will show that in every detail the new hospital has been built and furnished with regard to modern hospital requirements. Of old time Newcastle took her part in many a stern fray. Scots and English fought for her possession and around her, while many a time between Durham and Newcastle "There was no towne without it were closed, but it was brente." And now, in that great house of healing, English and Scots will fight, not against each other for the possession of a city built of dead stones but as brothers in arms for the living stones of the temple of humanity, against disease and sorrow and death. And here, too, will the memory of a great Queen, of a ruler who spared not herself for her people, be kept green, so that not of her alone but of the donors, whether rich or poor, who have given of their substance, of the physicians, the surgeons, the nurses, and of all who toil within its walls it may be said, "The just shall be had in everlasting remembrance."

## The Prophylaxis of Sleeping Sickness.

THE alarming spread of sleeping sickness, or human trypanosomiasis, in Africa and the apparently hopeless prognosis when infection has taken place, render the establishment of effective preventive measures peculiarly urgent. The nature of the problems involved in the institution of such prophylactic regulations can be best realised after a summary of the principal facts in regard to trypanosomiasis. That flagellated protozoa can occur in the blood of vertebrates has long been known. A form occurring in frogs was described in 1843 by GRUBY under the name of trypanosoma sanguinis and the generic name of trypanosoma was thus instituted. In 1878 it was shown by EVANS that a similar parasite occurred in the disease of horses in India and other parts of Southern Asia known as surra. This parasite is named the trypanosoma Evansi. In 1895 it was shown by BRUCE that the tsetse fly disease or nagana was due to a parasite of the same character, now known as the trypanosoma Brucei. So long ago as 1898 NEPVEU described trypanosomes as occurring in the blood of man but the discovery only achieved the notice which it deserved after the parasites were indubitably demonstrated in the blood of Europeans in 1902 by Dr. J. E. DUTTON and Sir PATRICK MANSON. In the same year the discovery of trypanosomes in the blood of patients suffering from sleeping sickness by CASTELLANI and the subsequent confirmation of that observation by various authors gave a great impetus to the study of these peculiar protozoa. The form occurring in sleeping sickness is now known as the trypanosoma Gambiense. Most, if not all, of the trypanosomes at present known seem to require two hosts, one a variety of the tsetse fly by which they are injected into the second host—a vertebrate. At present eight varieties of tsetse fly are known and it is possible that other arthropoda may be the agent of infection in some forms of trypanosomiasis. The tsetse fly which is the infective agent in sleeping sickness is the glossina palpalis, that in nagana or tsetse fly disease being the glossina morsitans.

The life-history of trypanosomes is at present far from completely known, although sexual and asexual forms are described and the relations of these have been carefully studied in a trypanosome occurring in the little owl by Dr. FRITZ SCHAUDINN, the discoverer of the spirochæta pallida in syphilis, whose recent death at the early age of 35 years leaves the study of protozoology sadly the poorer. The most usual form in which the parasite occurs in the blood is as an elongated organism about three times as long as a red blood corpuscle with a wavy lateral membrane and a long flagellum. A nucleus and a centrosome to which the name of blepharoplast has been applied are present. The terrible ravages wrought by this parasite may be realised when the figures are considered. It is calculated by Captain E. D. W. GREIG, I.M.S.,[1] that since 1900 in Uganda alone fully 100,000 natives have died from sleeping sickness, while Dr. J. L. TODD[2] estimates that from 400,000 to 600,000 deaths have occurred from that disease during the past ten years.

[1] THE LANCET, Jan. 27th, 1906, p. 226.
[2] Brit. Med. Jour., April 21st, 1906, p. 943.

In a paper of considerable interest and importance published in our columns[2] Dr. TODD discusses very forcibly the probable causes of the spread of the disease and offers some practical suggestions for checking that advance. He points out that the disease spreads but slowly from an infected area unless it is carried by an infected person into other localities and further that in the Congo Free State the disease has spread along the main routes of communication and to a much greater extent since the country has been opened out by Europeans. The paper is illustrated by maps which demonstrate these facts in a striking manner and also show where imported cases have occurred in previously non-infected districts. Previously to 1884 sleeping sickness appears to have been practically confined to the Lower Congo and certain posts on the main river as far as Bumba, while at the present time it occurs along the whole Congo basin and also on the banks of some of its tributaries as well as about Lake Tanganyika and Lake Victoria Nyanza, while recently it has appeared on the western shores of Lake Moero. It has also broken out in the neighbourhood of Sierra Leone. Dr. TODD concludes that the uninfected areas of the Soudan, Northern Nigeria, German East Africa, and British Central Africa stand in the gravest danger of being infected. From the nature of things it follows that the rational form of prophylaxis would be the prevention of entry of infected persons into a district where glossina palpalis is known to exist and where the disease does not occur. For this purpose Dr. TODD suggests "the establishment of medical posts of inspection along the trade routes leading from infected to uninfected districts and the removal of infected persons from posts in uninfected districts to places already infected."

Owing to the prolonged course of the disease in many cases, even as long as three or four years, it is obviously necessary if these recommendations are to be carried out effectively that some means of early diagnosis should be available. Fortunately, in the palpation and puncture of glands as used by Dr. TODD and the late Dr. DUTTON, such a diagnostic means has been found. After an examination of 6358 apparently healthy negroes of all ages and both sexes they came to the conclusion that every negro whose cervical glands are enlarged without obvious cause must be considered to be a case of trypanosomiasis until the contrary is proved. It has been shown that trypanosomes can easily be demonstrated in the fluid drawn from such glands by a hypodermic syringe and Dr. DUTTON and Dr. TODD found that though not infallible this measure afforded an efficient means of diagnosis. It is obvious that we are face to face with a real danger and that there is need for some endeavour to stop the advance of the disease. The cause is now known and the means of combating infection are apparent; it is, therefore, a matter for the administration of the areas in danger of infection to deal with. Neglect to carry out preventive measures must inevitably result in a loss of life among the great native populations concerned alarming to contemplate, especially when it is recalled that the disease has practically depopulated some of the districts in which it has appeared. Moreover, the danger to Europeans engaged in these districts is one to be borne in mind, since they possess no immunity to the disease other than that offered by the greater amount of clothing worn, and the recent lamented death of Lieutenant FORBES TULLOCH, R.A.M.C., from trypanosomiasis serves to emphasise this danger. We may express the hope that the authorities will carry out without delay some such measures as those outlined by Dr. TODD.

[2] THE LANCET, July 7th, 1906, p. 6.

# Annotations.

"Ne quid nimis."

## GEORGE BUCHANAN AND THE HEALING ART.

George Buchanan was born 400 years ago, and the University of St. Andrews has just commemorated the anniversary of its most distinguished alumnus. Sir Douglas Maclagan, in a note to his "College Lays," reviewed in these pages,[1] refers to the tradition that the "cap" imposed on the heads of successful candidates for the *summi in medicina honores* at Edinburgh was made out of the pantaloons of George Buchanan. If such be the case, the graduates of the "Grey Metropolis" may be excused for feeling a certain pride in having passed into the humanest of professions under cover (so to speak) of "the greatest of the Humanists," of one who, whether in prose or verse, never fails to speak in the highest praise of the healing art, who even in his "Rerum Scoticarum Historia," or in his "De Jure Regni apud Scotos," or in drama, elegy, lyric, and epigram goes out of his way to eulogise a profession fraught with benefits appreciated by all good citizens—by none more than by enlightened laymen like himself. Last week academic Scotland has been celebrating the quatercentenary of his birth, thus making tardy amends to one whose *manes* have been even more neglected than the living man, and doing something, let us hope, to deflect the point of the witty Irish scholar's home-thrust: "The Scots are more given to boast of Buchanan's name than to read his writings." All that is characteristic of his compatriots—"the good and the not so good"—was represented in George Buchanan. He had the love of knowledge for its own sake which made him from his boyhood a searcher, Ulysses-like, after fresh experiences, passing from college to camp, from professorial chair to diplomatic chancery, letting slip no opportunity of learning, or of turning to account what he had learned, till the wandering fit—or shall we say the *mania errabunda*?—left him, a returned exile, to spend the evening of his days in his native Scotland and to repay that "arida nutrix" (if not "injusta noverca") with services which ought to have put her to the blush. The world on which he entered was writhing in the strait-waistcoat of scholasticism from which it had to be rescued by scholarship, and Buchanan, like Erasmus and the other Humanists, set himself to the congenial task. There reigned an Aristotelianism which was far removed from Aristotle, inculcated in a Latinity which was not Latin, both protected by a Church which had declined from its early purity to become the nursing-mother of obscurantism in the academic sphere and of despotism in the political. Panoplied in the learning of the Sorbonne, a French university man, "finished to the finger-nail," combining the lore of Erasmus and the humour of Rabelais with a poetic vein and a gift of verse denied to both, Buchanan served in the anti-scholastic campaign under a flag inscribed—

"Antiquam exquirite matrem."

[1] THE LANCET, Nov. 27th, 1886, p. 1025.

and with all available equipment (satire by preference) he recalled the iron age of deductive logic with its verbal *Spinngewebere* to the golden age of untrammelled thought and genuinely inspired genius, constraining the world (as in the tale of Aladdin) to exchange the feeble, fœtid lamps of the new order for the bright, fragrant lamps of the old. In this enterprise he developed and displayed a genius for sarcasm, for "irony, that master spell," which carried strongholds and levelled bulwarks impregnable against other artillery—indeed, to this day he has his equal to find in a combination of delicate raillery and high-wrought invective which suggest Horace and Juvenal rolled into one. The "Fratres Fraterrimi" and the "Franciscanus" remain among the masterpieces of satirical production and can never be left out in any roll-call of the forces to which the Renaissance owes its most salutary and enduring conquests. This is no place to re-open the embittered controversy as to his relations with his Queen, Mary of Scotland, and we may pass on to his signal services to education, services which every instinct of his nature urged him to render, lover of ingenuous youth as he was and possessed (as one who knew him well puts on record) "eâ ingenii dexteritate ut cum pueris repuerascere et ad omnes omnium ætatum usus modeste et sapienter sese accommodare et vellet et posset" (with such nimble flexibility of mind, that with boys he had the power, as he had the will, to become a boy again and, with equal modesty and wisdom, to adapt himself to all the requirements of any stage of life). What a subject for a painting does he not furnish by his latest attitude when in his 77th year he—the great Humanist, Professor, and Diplomatist—was seen from his death-bed teaching a little boy his alphabet, a, b, ab; e, b, eb! Old Chaucer's immortal line on the Oxford clerk—

"And gladlie wolde he lerne and gladlie teche"—

has had no finer exemplar than George Buchanan who, holding all knowledge in reverence, knew no greater delight than imparting it and who (to conclude with what we set out by remarking) had a specially "warm side" for the medical art, dwelling fondly in his great history on the proficiency of the ancient Scottish kings and nobles in the treatment of the wounds which they were so prone to inflict, and commemorating in a lovely poem in the Ovidian distich the tender care and skill with which he was cured of a severe (and admirably described) attack of the "morbus articularis"—

"Sæpe mihi medicas Groscollius explicat herbas
Et spe languentem consilioque juvat;
Sæpe mihi Stephani solertia provida Carli
Ad mala præsentem tristia portat opem."

Characteristically enough, physicians have been among his greatest eulogists and most effective commentators from Guy Patin and Jean Pincier in his own century to Arthur Johnston in the century following, and so on to Robert Sibbald, Archibald Pitcairne, Tobias Smollett, and "Zeluco" Moore in the next. Francis Adams and Sir James Mackintosh may be mentioned as among his ardent admirers in the nineteenth century; and in this, not yet in its teens, on the occasion of the 400th anniversary of his birth, we venture to offer this modest *immortelle* to his *manes*.

## THE MEAT OF THE PEOPLE.

FEW people are aware when ordering a joint of meat at the butcher's how many various sorts of meat can be purchased in the London market. The ordinary housewife orders a sirloin of beef for the Sunday dinner and makes no inquiry as to its origin, and is also most likely absolutely ignorant of the fact that it may be anything but English beef. Even the English beef coming into the London markets varies much in quality from the prime Scotch ox or heifer beef, down to that from plain cows, which is quite wholesome though poor in quality, and is chiefly used for sausages. Four-fifths of the meat sold in the London market is of foreign origin and ranges in quality. Thus there is the best United States beef brought over in a chilled, not frozen, state (this beef is preferred by many English people to that of home origin and is largely used in London); then there is the Canadian beef brought over alive and killed at Deptford Market, the Dutch brought over here fresh, the New Zealand and Australian beef which comes over here frozen, and the Argentine meat which comes over in a chilled state. All these different kinds of beef can be bought in the London shops under the generic name of "beef" and as very few people know enough about beef to enable them to inquire as to its origin it is practically sold as English meat. The same arguments hold good as to the sale of mutton and of lamb. How many housekeepers when they see the advertisement "Canterbury lamb is now in season" know that Canterbury in New Zealand, not Canterbury in Kent, is referred to? Frozen mutton can be carefully thawed and made to look like English mutton and can be, and is, sold as such. THE LANCET has always raised its voice against substitution in any form and the selling of foreign meat without declaring it to be such is substitution. It is not contended that foreign meat, frozen or otherwise, which has been subjected to proper inspection is not fit for food, or is even much inferior to English meat, but to sell it without declaring it to be of foreign origin is not fair to the public. In one large firm of coöperative stores in London attention is drawn to their price for meat being higher than at other stores, on account of the fact that they sell exclusively British meat.

## THE RELATION OF FERTILITY IN MAN TO SOCIAL STATUS.

DURING the last few years the question of the physical deterioration of the population has greatly agitated the public mind and has elicited all sorts of opinions, being accepted by some as an undoubted fact and vehemently denied by others. The principal argument in favour of the existence of deterioration, or at least the argument that has attracted most attention, is the high percentage of rejections among recruits seeking to enter the army—young men to whom the recruiting sergeant has made no objection but whom the medical officers refuse on the ground of physical imperfections. To this the other side replies that the high proportion of rejections is illusory as an index to the condition of the population at large and that the recruits so far from being average samples of the wage-earning classes are for the most part mere wastrels whose physical and mental incompetence handicap them in the labour market. The arguments on either side are therefore incomplete and inconclusive, but apart from the rejections of recruits there are many data from which some inferences may be drawn as to the physical condition of the nation. There are, of course, the death-rates of various classes at various ages, the duration of life in selected classes as shown by the results of life assurance and annuity offices, the birth-rate, the marriage-rate, the proportion of persons following indoor and outdoor occupations, returns of able-bodied and sick paupers, lunacy returns, the consumption of certain articles of food and drink relatively to the population, and so on. Among these various factors in national well-being or the reverse none is more important than the fertility of the people and some of the questions herein comprised have been studied in a monograph[1] written by Mr. David Heron, being one of the memoirs issued from the Drapers' Company biometric laboratory in connexion with University College, London.

[1] Published by Dulau and Co., 37, Soho-square, London, W. Pp. 22. Price 3s.

Mr. Heron devotes his first ten pages to an exposition of his methods of computation, after which the influence of social status on the birth-rate is shown numerically by correlating the characters given in one of his tables. The coefficient of correlation is some number between 0 and 1. Unity marks a complete causal relationship; correlations between 0·00 and 0·25 may be spoken of as small; between 0·25 and 0·50 they are moderate; between 0·50 and 0·75 they are large; and between 0·75 and 1 they are very large. A negative correlation means that one variable decreases with the increases of the other variable. First of all he examines the influence exerted on the birth-rate by those characters which mark ease and culture. He finds accordingly that the correlation between the proportion of occupied males who are engaged in professional occupations and the birth-rate is

$$= -0\cdot781 \pm 0\cdot051,$$

while the correlation between the number of female domestic servants kept and the birth-rate is

$$= -0\cdot764 \pm 0\cdot054.$$

In other words, in those districts where the professional classes are most numerous and where many domestic servants are kept, there the married women have fewest children. He then proceeds to consider the birth-rate as affected by poverty, pauperism, lunacy, pulmonary tuberculosis, cancer, and a great number of other conditions. With reference to the age of parents, he says that since emphasis is frequently laid on the postponement of marriage as one of the sources upon which the reduced fertility of the professional classes depends it is as well to note how very marked results can be associated with very slight differences in the mean age of reproductive wives. The only way of measuring the influence of age in this question of birth-rate and social status is to determine the coefficients of partial correlation. If $r_{23}$, $r_{13}$, and $r_{12}$ are the correlation coefficients between three variables, then the partial correlation coefficient between the first and second variables for a constant value of the third is known to be

$$\frac{r_{12} - r_{13}r_{23}}{\sqrt{1 - r_{13}^2}\sqrt{1 - r_{23}^2}}.$$

But if the subscript 1 denote the birth-rate, 2 a character marking social status, and 3 the mean age of the wives of a district, then the above partial coefficient shows the reduction in the total coefficient ($r_{12}$) by taking a constant mean age of the married women. The correlation between birth-rate and mean age of wives was found to be

$$= -0\cdot834 \pm 0\cdot040.$$

The general inference from Mr. Heron's investigations is that postponement of marriage is not the sole reason why the better element in the community has at present the lower birth-rate.

## GANGRENE OF THE LUNG AFTER SUBMERSION.

THOUGH the condition of the body of persons drowned has been the subject of numerous minute studies by medical jurists the consequences which may follow in persons who have escaped from drowning have received little attention. One of the most important of these is broncho-pneumonia. At the meeting of the Société Médicale des Hôpitaux of Paris on April 27th M. André Bergé reported a case in which pulmonary gangrene resulted.[1] A woman, aged 31 years, attempted to commit suicide about midnight on Jan. 30th, 1906, by throwing herself into the Seine. On contact with the very cold water the woman, who could swim, called out and endeavoured to maintain herself above water. She was carried by the very rapid current about 100 metres before she was rescued. She lost consciousness and the last thing she remembered was a violent pain in the chest. On recovering consciousness she vomited some water tinged with blood. She was taken to hospital about 4 A.M. Her face was congested and she was still in a state of mental obnubilation. On Jan. 31st she was perfectly conscious and complained of pain in the right side. There was a frequent dry cough but nothing could be heard on auscultation. The temperature in the morning was 99·8° F. and in the evening 101·3°. In the left eye was a large subconjunctival hæmorrhage the result of the congestion of the face. On Feb. 1st the temperature in the morning was 102·1° and in the evening 103·4°. There were pain in the right side of the chest and slight diminution of the resonance and vesicular murmur at the right base. On the 2nd some viscid mucus was expectorated. At the right base the vesicular murmur was absent. Bronchial breathing with, after coughing, fine subcrepitant râles was heard. The vocal fremitus was everywhere too feeble for purposes of examination. Two exploratory punctures in the dull area did not yield any fluid. The symptoms began to diminish on the 8th and from the 9th to the 12th the temperature was normal. On the 13th the temperature rose again to 103·1°. On the 14th there were pains at the left base and dulness at its lower part behind. The vesicular murmur diminished and disappeared in the dull area and the vocal resonance was lost. There was a dry cough with a little expectoration of mucus. On the 17th the morning temperature was 103·8° and the evening 104·5°. Two exploratory punctures were made with negative results. On the 28th the breath became very fœtid and greyish muco-purulent frothy sputum with a putrid odour was expectorated in abundance. The signs at the left base, occupying about the lower third of the lung, remained the same. At the right base some dulness persisted and the vesicular murmur began to return and was accompanied by subcrepitant râles. The sputum contained a varied flora—leptothrix, long bacilli, short bacilli, micrococci, and yeasts. On March 1st the fœtor of the breath and sputum became intermittent. On the 4th there was some blood in the sputum. On the 8th some subcrepitant râles were heard at the left base. The temperature became normal on the 9th and recovery followed. M. Bergé thought that the entrance of water charged with septic germs into the air passages produced a focus of broncho-pneumonia at the right base and a symmetrical focus of gangrene at the left.

[1] THE LANCET, May 12th, 1906, p. 1353.

## THE ADULTERATION OF BUTTER.

WE understand that the report of the Select Committee o the House of Commons appointed some months ago "to consider whether any, and if so what, further legislation is required in order to secure the better conduct and control of the trade in butter and butter substitutes" has been laid upon the table. The recommendations of the committee would appear to imply that its members recognise that some control is needed further than that provided by the analysis of samples secured under the provisions of the Sale of Food and Drugs Act. In these columns we have referred more than once to the increasing difficulties of the analyst in regard to differentiating one fat from another. When an analytical difficulty is admitted it is obvious that some other machinery must be started to protect the public from fraud. The committee evidently realises this and recommends the appointment of inspectors who should have the power to enter any premises where a reasonable suspicion arises that butter is blended, reworked, or adulterated, or where a stock of adulterated butter is kept. Similarly, the storing of foreign fats, animal or vegetable, should not be allowed, it rightly suggests, in any registered butter-making premises. No butter should contain more than 16 per cent. of water and the same limit is suggested for margarine. As regards the trade in milk-blended butter or butter substitutes the committee sees no

reason for prohibiting it but it recommends that all butter substitutes or substances containing butter fat (not being margarine) should be sold under a name approved by the Board of Agriculture, provided that such a name shall not be calculated to prejudice the sale of the article. An honest label, therefore, seems practically to sum up the committee's recommendation if we except the limitation placed upon the maximum amount of water that is to be allowed. The principle of registration and inspection when applied to the sources of production in the way suggested should effect, it seems to us, a very salutary check upon the large amount of chicanery which exists in the butter trade at the present time. If the system should prove to work satisfactorily it is obvious that the responsibility for fraud ultimately detected by the analyst under the Sale of Food and Drugs Act will be fastened absolutely on the shopkeeper. In this connexion it may be pointed out that the adulteration of tea has been practically stamped out not by the operations of the Sale of Food and Drugs Act but by the examinations made at the port of entry by the Customs officials. It follows that if tea bought at the shops proves to be adulterated the fraud has been perpetrated by a middleman somewhere. As a matter of fact, tea is seldom examined by the public analyst and when it is it usually proves to be genuine.

## THE DISPENSARY TREATMENT OF PULMONARY TUBERCULOSIS.

IN the Nobel lecture on Tuberculosis published in our columns on May 26th[1] Professor R. Koch emphasised the value of the excellent suggestion of Professor Calmette that dispensaries should be organised to afford relief, advice, and assistance to those sufferers from tuberculosis who though too advanced for treatment in a sanatorium were yet able to do a certain amount of work. He pointed out that more than 50 such dispensaries or "care stations" had been established in Germany, while the scope of their usefulness had been extensively widened under the direction of Pütter and Kayserling. Professor Koch regards these "care stations" as one of the most powerful agencies in the fight against tuberculosis. We publish in another column a letter of considerable interest from Dr. D. B. St. John Roosa of New York, giving an account of the work of the New York Post-Graduate Medical School in illustration of another use that may be made of dispensaries in the treatment of pulmonary tuberculosis. The idea originated with Dr. John F. Russell of endeavouring to trea early cases of that disease for whom sanatorium treatment was not obtainable while the patients continued to perform their daily work. Great care has been exercised in the selection of patients for this treatment and the following rules have been made. The patients must be able to earn their own living and to obtain a sufficiency of ordinary food. They must have early signs of actual tuberculosis, confirmed by laboratory investigations, but no signs of cavity formation or of extensive disease and must not be the subjects of any other serious disease or complication. They are required to attend at the dispensary every morning and evening—that is, before and after their day's work. They are given carefully graduated doses of mixed fats in the form of an emulsion prepared by Dr. Russell, containing 42 per cent. of fat made of beef-fat, cocoanut, peanut, and olive oil in equal parts, with about two drops of oil of cloves added to each ounce of emulsion. No supervision of the patient's food, clothing, or occupation is exercised but careful directions as to personal hygiene and the disinfection of sputum are given. In addition to the emulsion a fine pulp prepared from raw vegetable is also now given to the patients and this is said to lessen the need for purgatives entailed by the fatty super-alimentation and also to assist the action of the fats. Dr. St. John Roosa states in his letter that the results obtained have been encouraging and that in the course of the eight years the system has been in operation 55 apparent cures have resulted; unfortunately, no details are given of the total number of cases that have been under treatment. Since 1905 an in-patient department has been added to the dispensary, where eight patients may be treated. A similar dispensary has been started in Richmond, Virginia. The special features of the dispensary at the New York Post-Graduate Medical School seem to be the care taken in the selection of the patients and the daily administration of fatty and other foods under the direct observation of the dispensary authorities, the hours of attendance being so arranged as to allow the patients to carry on their occupation. It is obvious that the cases treated are just those for which sanatorium treatment offers the best chance of ultimate recovery and thus the dispensary should only be used for cases which it is impossible, for domestic or pecuniary reasons, to send to sanatoriums. It is, however, a method which is worthy of being carried out elsewhere, since it offers another field of usefulness to the out-patient department of dispensaries in the treatment of tuberculosis, and since at present it is not possible to obtain sufficient sanatorium accommodation for all suitable cases it affords a means of dealing with some of the surplus cases. In districts where "care stations" exist of the kind suggested by Calmette and approved by Koch, these institutions might with great advantage adopt somewhat similar methods for some of their cases.

[1] THE LANCET, May 26th, p 1449

## THE PACKING AND TRANSPORT OF STRAWBERRIES.

IT is often said that it is well not to inquire too minutely into the incidents connected with the preparation or transport of our food if we desire our relish for it to remain unimpaired. Of course, the handling of food cannot be very well avoided, nor can its exposure to undesirable conditions be entirely prevented, but care can at least be taken to insure the cleanliest transport and manipulation possible in circumstances that are admittedly difficult. There is no excuse, for example, for pitching loaves on the pavement or for exposing fish or meat to the oftentimes malodorous air of the street. It is not our wish to detract from the delights of the strawberry, for it is a fruit which is very universally enjoyed at this season of the year and there is no reason for believing that the sound, ripe strawberry is not wholesome, but there is evidence on all sides that it is peculiarly exposed to contaminating influences. Strawberries more or less wet are hawked on barrows in the street and there is no need to enlarge on the favourable sticky surface which the fruit presents for catching air-borne poisons. Quite recently we saw a large consignment of strawberries being unpacked from a train consisting of cattle trucks. It is to be hoped that the trucks had been carefully washed before the strawberries had been placed there. Most of the baskets were without lids and the strawberries were in many cases moist and in a condition well adapted for the adherence of dust. The dust of a not too clean cattle truck is not likely to be antiseptic and, what is worse, may easily be infected with tubercle bacilli considering that tuberculosis is a disease to which cattle are liable. Surely if cattle trucks or horse boxes must be used they ought to be most scrupulously cleaned out and disinfected before strawberries in uncovered baskets are placed in them. In the example which we quote the trucks did not appear to

have undergone any special cleaning at all. It is a wise precaution to wash strawberries in perfectly clean water before they are eaten. Such treatment does not injure the flavour of the fruit in the least. The man who carefully washes his lettuce or watercress because he thinks that pathogenic entities may be conveyed by them may as well neglect this precaution if he omits in the case of the strawberry the same simple process.

## THE PHYSIOLOGICAL ACTION OF ETHYL CHLORIDE, ETHYL BROMIDE, AND ETHYL IODIDE, AND OF SOMNOFORM.

ALTHOUGH some of the anæsthetics mentioned in the title, particularly ethyl chloride, have now been in use for some years, and although considerable clinical experience has been accumulated, yet very little experimental pharmacological work seems to have been performed with these drugs. The June number of the *Bio-Chemical Journal* contains a contribution to the subject by Dr. W. Webster, lecturer on anæsthetics in the Manitoba Medical College. The experiments were conducted upon dogs, cats, and frogs, which were anæsthetised in the first instance with ether, chloroform, or the A.C.E. mixture, and sometimes, in addition, by the intravenous or subcutaneous administration of morphine. Ethyl iodide was tested only for the purpose of making the investigation more complete; its low volatility and nauseous odour would prevent its use as an anæsthetic in the human subject. Dr. Webster finds a remarkable uniformity in the qualitative effects of these drugs. Their physiological action differs in degree only, depending simply on the volatility of the drugs. The presence of methyl chloride does not appear to affect the results. With small doses the respiration is increased in frequency and depth; with larger doses it is diminished in both these respects. When very large doses are administered respiration may cease entirely some considerable time before the heart stops. The blood pressure is slightly raised with small doses of these drugs but larger doses produce a depression with or without a small preliminary rise. These effects occur with intact vagi, with both vagi cut, after full doses of atropine, and after nicotine. The drugs do not paralyse the vagus nerve endings. It is possible to obtain full action of the vagus when the animal is deeply under the influence of the anæsthetics. Their action upon the circulatory system appears to be almost entirely directly upon the heart. Dr. Webster points out that the use of atropine is contra-indicated in cases of an over-dose of these anæsthetics. In the case of two animals, one of which was being anæsthetised with ethyl chloride and the other with ethyl iodide, rapidly fatal results occurred after the administration of atropine with an amount of the anæsthetic which in the absence of atropine had only produced a slight effect. The investigation has confirmed Mr. Sydney W. Cole's statement as to the value of artificial respiration in cases of an overdose of these anæsthetics.[1] In several instances Dr. Webster restored an animal by artificial respiration after voluntary respirations had ceased for from 30 to 90 seconds and the blood pressure had fallen almost to zero. These workers are in agreement also as regards the necessity for keeping a careful watch over the respiratory movements in using somnoform to avoid the great danger of paralysis of respiration. But as regards the effects of ethyl bromide and somnoform on the vagus their results are diametrically opposite, as is pointed out in an appendix to the paper by Dr. Swale Vincent. The tracings given by Dr. Webster show conclusively that full vagus effects can be obtained when the animal is completely under the influence of the drug. Mr. Cole, on the contrary, found that ethyl bromide paralysed the vagus terminals and his observation applied equally to ethyl chloride, ethyl iodide, and somnoform.

[1] The Physiological Action of Ethyl Bromide and of Somnoform, by Sydney W. Cole, M.A., Brit. Med. Jour., June 20th, 1903, p. 1421.

## THE MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

THE sixty-fifth annual meeting of this association will be held on Thursday and Friday, July 26th and 27th, at the rooms of the association, 11, Chandos street, Cavendish-square, London, W., under the presidency of Dr. Robert Jones. Dr. Jones will deliver his presidential address at 2 P.M. on Thursday, after which Dr. Joseph S. Bolton will read a paper entitled "The Prefrontal Cortex Cerebri," with lantern plates. On Friday morning at 11 o'clock, Dr. F. W. Mott will read a paper entitled "The Effects of Alcohol in Hospital and Asylum Practice." Dr. A. Helen A. Boyle will narrate "The History of an Unusual Case of Murder"; and Dr. Edward N. Brush of the Sheppard and Enoch Pratt Mental Hospital, Maryland, U.S.A., will give a Description of the Method of Admission into, and Treatment in, the Hospital, also of the Founding and Organisation of the Hospital. On the afternoon of this day Mr. M. J. Nolan will read a paper entitled "On the Possibility of the Limitation of Lunacy by Legislation"; Dr. W. F. Menzies will read a paper entitled "Tuberculin Diagnosis"; Dr. Robert Pugh will read a paper entitled "The Relation of Goitre to Insanity"; and Dr. Edwin S. Pasmore will describe a Method of Taking "Family Histories." Facilities will be afforded by the London County Council to members on Saturday morning, July 28th, between 10 A.M. and noon, for visiting the London County Council electric power (52,000 horse power) generating station at Greenwich. The annual dinner of the association will take place on Thursday, July 26th, at the New Gaiety Restaurant, Strand, London, W.C., at 8 o'clock, and members are requested to notify their intention of dining to the present general secretary, Dr. Robert Jones, at 11, Chandos-street, Cavendish-street, London, W.

## THE CONGRESS OF THE ROYAL SANITARY INSTITUTE.

THIS Congress opened on Monday last with a succession of social gatherings, there being receptions by the President, Sir Edward Fry, and the Lord Mayor of Bristol, an organ recital, and an inaugural address. This last, which was delivered by the President, was more of an ornamental than a practical character, and was listened to by an audience alive rather to the social than the scientific side of the gathering. The real work of the Congress began on the second day, Tuesday, with the meeting of the first section, that of Public Health, in the Victoria Rooms and two conferences—viz., those of municipal representatives and of engineers and surveyors to municipal and county authorities. With the exception of two papers read in the former of these conferences on the question of dealing with tuberculosis from an administrative standpoint, none of the subjects discussed had any special interest for medical men as such and we shall therefore confine our attention to those of the sectional meeting. The address of the president of the section, Sir William J. Collins, was in his absence read by one of the secretaries. In it Sir William Collins struck the keynote of the major part of the subsequent discussion, for owing, in the first place, to the non-appearance of the readers of some of the papers and in the next place to want of time two subjects only received adequate consideration. Sir William Collins's theme was the error of confining attention to the bacillus to the neglect of the soil, as a corollary of the variability

or instability of so-called species. He reminded his hearers that so long ago as 1884 he had maintained that in certain circumstances diseases commonly accounted specific might arise independently of contagion, in fact, *de novo;* that diverse diseases might have a common ancestry; that the same poison might produce different results in different individuals; and that there was in all nature a tendency for the common to become specific and the homogeneous to give birth to the heterogeneous; while in 1889 he enlarged further on the important part played by the soil, adducing the remarkable instances of the immunity of field mice to the bacillus of mouse septicæmia, fatal in three days to the domestic or white species, and the still stranger immunity of the Algerian alone among sheep to that of anthrax. He claimed the authority of Lord Lister, Dr. W. H. Dickinson, Sir Stephen Mackenzie, and Professor Virchow as supporting him in the reaction against the exclusive attention to the "germ theory" on the part of the "school of Pasteur and Koch," and described it as a return to the teaching of Chadwick, Southwood Smith, B. Richardson, and the pioneers of sanitary reform who thought only of pure air and water, of cleanliness and health.

## THE MANUFACTURE OF LEAD PAINTS AND COLOURS.

AT the instance of the Home Office the Secretary of State has issued a draft of regulations which he proposes to make under Section 79 of the Factory and Workshop Act, 1901, for the manufacture of paints and colours in which dry carbonate of lead or red lead is used. These regulations are intended to supersede the existing special rules and embody the points agreed upon at a conference held between the representatives of the Home Office and manufacturers of paints and colours in February this year. It is stated that the draft regulations are such as to commend themselves both to employer and employed but to comply with the provisions of the Factory Act the regulations must be formally published in draft before being made. Any objection with respect to these draft regulations must be sent to the Secretary of State within 40 days of the date of their issue (July 9th). The regulations are divided in two parts, the first relating to the duties of the employers and the second to the duties of the persons employed.

## DISLOCATION OF THE MANUBRIUM FROM THE GLADIOLUS.

IN the *Intercolonial Medical Journal* of Australasia for March Dr. W. A. James has published a case of a dislocation of the manubrium from the gladiolus—a very rare injury. A man, aged 51 years, whilst working in a sewer was pinned against the wall of a shaft by a mass of earth weighing about half a ton. The main impact took place on the upper part of the sternum. He was dazed but not rendered unconscious and half an hour later was able to ride to hospital on a tram-car. He was strapped up. On examination on the following day he exhibited a well-marked ridge across the sternum which was found to be the upper border of the gladiolus. Above this was a depression extending upwards for about an inch—the depressed manubrium, which was extremely tender. The manubrium was slightly tilted so that the depression was greater on the right side than on the left. Pressure on the sternal notch caused severe pain. Slight mobility could be obtained but the attempt was abandoned because of the distress caused. The second ribs went with the gladiolus and were not fractured. The sternal end of the left clavicle was slightly luxated but could be replaced easily, causing severe pain. The patient complained of acute pain on coughing or deep breathing. He had spat up small amounts of blood on six occasions. There was a sharp stabbing pain which ran backwards from the right side of the sternum at the site of the dislocation to the right scapula. For a couple of days the patient was very distressed and unable to bend or to sleep. He was strapped in various ways which gave much relief and reduced the depth of the depression by about half an inch. Two months after the injury there were a depression of about half an inch, slight mobility, tenderness, and a friction rub on the left side of the ridge. Three months after the injury the patient could do only light work and was easily fatigued. Many cases of this dislocation have been described as fractures, but there is an amphiarthrodial joint between the manubrium and the gladiolus lined with hyaline cartilage and the bones are separated by a disc of fibro cartilage. Normally there is slight mobility of this joint. Cases in which this dislocation occurs are usually fatal from internal injuries. It is noteworthy that in this case the patient could walk within an hour of the injury and was treated throughout as an out-patient.

## GONORRHŒA IN AN INFANT AGED TEN MONTHS; GONOCOCCIC INFLAMMATION OF THE SCALP.

THOUGH gonorrhœal vulvo-vaginitis in young children is far from rare gonorrhœal urethritis is extremely rare. At the meeting of the Société de Pédiatrie of Paris on May 15th M. Apert and M. Froget reported the case of a male infant, aged ten months, who was suffering from urethritis which was accompanied by a large phlegmon ou swelling of the whole of the posterior hemisphere of the cranium. After 48 hours the redness and induration were limited to peripheral patches resembling those of erythema nodosum, while at the centre of the swelling was a white and soft œdema which quickly disappeared. In the meantime two small papules formed on one of the patches and became transformed into pustules. The pus which they contained showed polynuclear cells and masses of gonococci, as did also the discharge from the urethra. The origin of the gonorrhœa could not be ascertained. Inflammation of the scalp is a very rare complication of gonorrhœa. The rapid and almost complete resolution of the inflammation of the cellular tissue is noteworthy and the condition is analogous to the gonococcic peritonitis of little girls, the onset of which is marked by great acuteness and is rapidly followed by complete resolution. Though the gonococcus is very tenacious on mucous surfaces its vitality in the cellular tissue is brief.

## TOBACCO SMOKING BY THE IMMATURE.

WE hold no brief for the cigarette, nor do we fail to recognise the fact that smoking by juveniles is an evil, but the case for remedying the evil is not helped by doubtful statements. Everybody knows that tobacco is a poison and the suggestions, therefore, that tobacco is injurious because of its impurity or adulteration or because poisons are added to it are altogether beside the issue. If the tobacco smoked were the purest possible leaf the evil of smoking by juveniles, in our opinion, would be not a whit the less. If it were otherwise there would be no necessity for suppressing such smoking so long as the youth was supplied with pure tobacco. Since tobacco is itself a poison we need no further argument against indulgence in it by the immature or its abuse by the grown-up person. We can well believe that certain tobaccos are more poisonous than others but we very much doubt whether substances more injurious than tobacco itself are ever added to the manufactured leaf. Flavourings and sweetening substances, such as liquorice, glucose, and glycerine, are often added, but these are harmless compared with pure tobacco itself. Statements have been freely made that morphine or

even cocaine is added to cheap cigarettes in order to give them immediate soothing qualities or "to soften" the flavour of an otherwise harsh-smoking tobacco. We cannot accept such statements applied, at all events, to cigarettes retailed at five or even six a penny. The tobacco in such cigarettes is of an inferior and inexpensive kind we admit, but we have not been able to find the smallest trace of foreign poisons in some very cheap cigarettes which we purchased only recently and submitted to careful analysis. We doubt whether it would pay to add such comparatively expensive poisons. Opium is not cheap nor is cocaine. Tobacco of common quality is at any rate infinitely cheaper. The danger of smoking arises from tobacco poisoning and it is the wholesale and unchecked poisoning of the child with tobacco, chiefly in the form of cigarette smoking, against which the nation is asked to find a remedy. On what lines such a remedy can be made effectual we are not sure. It is obvious that different persons exhibit a different susceptibility to the poisonous action of tobacco even in the same country. In Oriental countries, however, excessive smoking, which is intensified by inhaling the smoke, commences almost from the cradle and is continued right through life apparently without any ill-effects.

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Mr. Alderman Thomas Boor Crosby, M.D. St. And., F.R.C.S. Eng., L.S.A., has been elected one of the two Sheriffs of the City of London for the coming year. He has been for many years in practice in the City. Although there may be some doubt as to whether Mr. Alderman Crosby will actually be the first medical sheriff of the City of London, it is certain that for a great many years no medical practitioner has been elected to that ancient and honourable office, an office the serving of which is incumbent on every citizen before he can become Lord Mayor. We offer our congratulations to Mr. Alderman and Sheriff-elect Crosby and trust that before many years have elapsed we may be able to greet him as Lord Mayor of London.

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THE King has given the undermentioned gentlemen His Majesty's Royal licence and authority to accept and wear the following foreign Orders which have been conferred upon them by His Highness the Khedive of Egypt in recognition of valuable services rendered by them: Mr. William St. Clair Symmers, M.B., C.M. Aberd., formerly professor of pathology in the Egyptian School of Medicine, the Imperial Ottoman Orders of the Medjidieh of the Third Class and of the Osmanieh of the Fourth Class; and Mr. Harold Nolan, M.D. Lond., medico-legal expert to the Egyptian native tribunals, the Imperial Ottoman Order of the Medjidieh of the Third Class.

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THE annual distribution of prizes to the students of St. Mary's Hospital Medical School will take place on Monday, July 16th, at 4 P.M. They will be presented by the Director-General of the Army Medical Service, Surgeon-General Sir Alfred Keogh, M.D., K.C.B., who will afterwards unveil the memorial bronze erected in the entrance hall of the Clarence Wing to the memory of members of the Hospital and Medical School who lost their lives during the South African war.

## ROYAL COLLEGE OF SURGEONS OF ENGLAND.

### ELECTION OF MEMBERS OF THE COUNCIL.

ON July 5th the election of three members of the Council took place. There were five candidates. Two of the retiring candidates offered themselves for re-election—namely, Mr. Henry Morris and Mr. Richardson Cross—and there were three new candidates—Mr. G. A. Wright of Manchester, Mr. W. Bruce Clarke of St. Bartholomew's Hospital, and Mr. J. Charters Symonds of Guy's Hospital. The following was the result of the poll:—

| | Votes. | Plumpers. |
|---|---|---|
| Mr. G. A. WRIGHT ... ... ... | 462 ..... | 46 |
| Mr. HENRY MORRIS ... ... ... | 386 ..... | 21 |
| Mr. F. RICHARDSON CROSS ... | 340 ..... | 10 |
| Mr. J. CHARTERS SYMONDS... ... | 316 ..... | 51 |
| Mr. W. BRUCE CLARKE ... ... | 305 ..... | 48 |

749 Fellows voted by post and nine personally. There were two rejected voting papers; one was not correctly authenticated and the other contained votes for four of the candidates. One vote was received by telegram but it could not be admitted as it was unauthenticated. Mr. H. J. Price of Maldon and Mr. Willmott H. Evans acted as scrutineers. The President declared Mr. Morris and Mr. Cross re-elected and Mr. Wright elected members of the Council.

### THE ANNUAL DINNER OF THE FELLOWS.

The third annual dinner of the Fellows of the Royal College of Surgeons of England was held on July 5th at the College in Lincoln's Inn-fields, after the election of members of the Council. The PRESIDENT, Mr. JOHN TWEEDY, was in the chair and about 70 Fellows were present. The President proposed the health of the King, the Senior Honorary Fellow, and then the health of the Queen and the Prince and Princess of Wales. He referred to the association of the Prince of Wales with the College in his position as President of the Imperial Cancer Research Fund. The President then proposed "The Fellowship of the Royal College of Surgeons of England." He said that he felt it almost necessary to apologise for appearing among them for the third time as President. On the first occasion on which the Fellows' dinner had been held at the College he had mentioned that it would be his last appearance there as President. He again declared that this was certainly his last appearance as President and on this occasion he was sure of what he said. The Fellowship of the College was a great institution; it was a symbol of the highest surgical attainments in the country and its diploma was sought after by the best surgeons in the colonies and in the United States of America. In these days of competition in degrees it was of interest to note that the Fellowship examination attracted yearly an increasing number of university students. The celebration of the centenary of the College in 1900 had led many to think that the College was only 100 years old, whereas they could trace back the corporate lineage of the College for nearly six centuries. In 1308 was to be found the first record or mention of the Barbers' Guild and at that time the barbers were engaged in the practice of at least some branches of surgery. From that time to the present there was an almost unbroken chain of descent and therefore it would be not unreasonable to celebrate in a year or two's time not the centenary but the sixth centenary of the origin of the College. One of the lectureships of the College, the Arris and Gale, dated from 1646. For a great part of the 600 years the surgeons were united to the barbers and it was not till 1745 that the separation finally took place. At one time the members of the College possessed the franchise for the City but when the separation finally occurred this privilege was lost. In proposing the toast of "The Fellowship" he coupled with it the names of Mr. W. Dunnett Spanton of Hanley and Sir Edgcombe Venning.

Mr. SPANTON, in reply, suggested that in praising the Fellowship the Fellows were really praising themselves. Wherever one went one found the diploma of Fellow held in high esteem.

Sir EDGCOMBE VENNING also replied and proposed the health of the President.

The PRESIDENT, in returning thanks to the toast of his health, dwelt on the cordial relations which had always subsisted between his colleagues in the Council and himself. Differences of opinion there had been, of course, but such differences made for progress. Their convictions were strong but their personal relations were amicable. One object of the dinner was to allow the inspection of the additions to the Museum during the past year and therefore he would ask those present to inspect the specimens in the adjoining room.

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# UNITED STATES DEPARTMENT OF AGRICULTURE

AND

# THE LANCET.

## OFFICIAL REPORT ON THE CHICAGO STOCKYARDS IN ANSWER TO THE CRITICISMS OF THE LANCET.

### *REPLIES THERETO BY OUR SPECIAL SANITARY COMMISSIONER.*

A PAMPHLET containing extracts from an official report on the Chicago Stockyards has been issued and we understand forwarded to all the members of the medical profession in this country. The pamphlet is entitled :—

COMMENTS ON "THE LANCET" ARTICLES AND "THE JUNGLE."

EXTRACT FROM REPORT OF THE COMMITTEE OF THE U.S. DEPARTMENT OF AGRICULTURE.

United States Department of Agriculture,
Office of the Solicitor,
Washington, D.C., April 13th, 1906.

This pamphlet is signed by JOHN R. MOHLER, Chief, Pathological Division, Bureau of Animal Industry; RICE P. STEDDOM, Chief, Inspection Division, Bureau of Animal Industry; GEO. P. MCCABE, Solicitor, Department of Agriculture, committee. Approved and respectfully submitted to the Honourable Secretary of Agriculture, A. D. MELVIN, Chief, Bureau of Animal Industry.

By way of explanation the pamphlet opens in the following manner :—

"THE CHIEF OF THE BUREAU OF ANIMAL INDUSTRY, DEPARTMENT OF AGRICULTURE.

SIR,—In addition to the complete report, heretofore submitted, the committee appointed by you to examine and report upon the meat-inspection service of the Bureau of Animal Industry at Chicago, and the conditions of the abattoirs as to sanitation, has prepared a statement, giving the charges which have been published in various places from time to time reflecting upon the character of the work at that place, and submit comments based upon information gathered from personal observation."

Then follow 29 quotations from my articles on the stockyards and 11 from "The Jungle," together with comments thereon. All these quotations and comments in so far as they concern my reports are reproduced below; and, in each case, I have endeavoured to answer the comments.

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*Quotation from "The Lancet," Jan. 7th, 1905 :—*

As for all the principles of sanitation laid down to govern the construction of abattoirs, these were ignored from first to last, consequently the insecurity is so great that several nations of the more civilised parts of the world have thought it necessary to enact special laws against Chicago.

*Comment of the U.S. Department :—*

The process of slaughtering cattle and packing the product is carried on in Chicago on a colossal scale, and it is true in many instances, sanitary features, such as light and air, are sacrificed to increase the capacity of the plants. The reference to special legislation against Chicago by several foreign nations undoubtedly refers to the requirements of these nations that all pork from the United States shall be microscopically inspected for trichinæ.

*"The Lancet's" reply to the comment :—*

This comment practically admits the truth of my principal contention—namely, that though more animals are killed at the Chicago stockyards than in any other place in the world, there is no slaughter-house or abattoir in the technical sense of the term. The first rule governing abattoirs is the plentiful supply of air and light. These essentials, it is deliberately stated, are "in many instances" sacrificed. My next contention is that the care of public health must come first, but here we are officially informed that public health, as represented by the need of light and air, is "sacrificed" to Mammon "to increase the capacity of the plants"—in other words, the profits of the packers. This is a most barefaced admission of guilt. The reporters were well inspired when they used the word "sacrifice." It is indeed a sacrifice of every principle, of every sense of duty, that should be held most sacred. In many countries the law would severely punish persons capable of endangering the health of the community "to increase the capacity of their plants."

After such an admission, made in the very first comment, it is questionable whether it is worth while going any further. This might be considered enough in itself for the complete condemnation of the stockyards. What can be expected from people who sacrifice light and air for the sake of profits! After such a confession anything is possible. The faults that follow are the natural consequence of this fundamental lack of principle; they become, comparatively speaking, mere matters of detail. The following is the full list :—

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*Quotation from "The Lancet," Jan. 7th, 1905 :—*

The importation of pork products from Chicago to Germany, Austria, France, and Denmark is prohibited unless accompanied by a certificate issued, not by any local authority but by the Government of the United States itself.

*Comment of the U.S. Department :—*

A microscopic examination of pork shipped from the

United States is required by Germany, France, Denmark, Italy, and Austria. This requirement applies not only to pork from Chicago but to all pork from any part of the United States.

*"The Lancet's" reply to the comment:—*

This confirms my statement and adds a nation to those which I had mentioned, namely, Italy, which when the list was given to me verbally at Chicago had been omitted.

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*Quotation from "The Lancet," Jan. 7th, 1905:—*

Therefore the cattle, hogs, and sheep, even at the Berlin rate for slaughter-house fees, would at Chicago bring in at least $4,800,000 per annum. But a great amount of poultry is killed here, and there is also a very large horse market, so that the present amount of business done might easily bring in more than $5,000,000, or £1,000,000 sterling per annum to the Chicago municipality.

*Comment of the U.S. Department:—*

The inference that horses are slaughtered for meat in Chicago is erroneous and without foundation in fact, so far as this committee is aware. The municipal ordinances of Chicago not only forbid this practice, but make it a misdemeanour to have horse-meat in one's possession.

*"The Lancet's" reply to the comment:—*

To say that I inferred that horses were slaughtered for meat makes me suspect that the writers of this report have never seen a genuine, that is, a properly built and organised, abattoir. If they had they would know that the slaughtering of horses is quite a separate industry, requiring, for instance, a totally different pavement. If there had been a horse slaughter-house at Chicago I should have looked upon it as another question. At Paris, for instance, there are the two slaughter-houses of La Villette and Vaugirard; but horses are taken to a third special establishment, some miles in another direction—namely, at Villejuif. In England this is considered so different a matter that we use a different expression, and while we take a bullock to the slaughter house we take a horse to the knackers' yard. All the cattle taken to the stockyards at Chicago are not slaughtered but many are exported alive and a large quantity go to England. So there is a cattle market and I was told that there was "also a very large horse market"—not a slaughter-house but a market—and had this been a municipal market the trade in horses would have contributed to the municipal receipts. This is all that I meant; this is all that I said; and to endeavour to make me say what I did not say seems to imply that there is not much fault to be found in the statement which I really made.

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*Quotation from "The Lancet," Jan. 14th, 1905:—*

The animals were killed, not in abattoirs, but in mills or factories—huge, hideous, box-shaped buildings, five and six storeys high. Private slaughter-houses were, and generally are, very defective when judged from the sanitary point of view; still they are preferable to slaughtering in factories. The number of animals killed is much smaller than in factories, and this is done not upstairs, but on the ground, and in a little building like a stable, where there is no difficulty in obtaining air and light. ..... Nowhere could I discover the smallest trace of a slaughter house.

*Comment of the U.S. Department:—*

Accepting the author's definition of a slaughter-house, it may be stated that in Chicago abattoirs No. 94, No. 95, No. 96, and No. 198, all having Federal inspection, comply with these specifications. It should be stated further that the sanitary condition of one of the above slaughter-houses was so poor that inspection has been withdrawn since the report of the committee was submitted

*"The Lancet's" reply to the comment:—*

There is a good deal of confusion here. It is impossible to compare the greatest slaughtering centre of the world with a private slaughter-house. As a rule, the latter would be taken to mean a small yard and shed behind a retail butcher's shop where one or two bullocks or half a dozen sheep are occasionally killed by the butcher and his assistants. These little establishments are often very defective. The object of establishing an abattoir or public slaughter-house is to do away with these defects, not to reproduce them, as, it is stated, was done at the Chicago abattoirs of which the numbers are given. But I did not see the places mentioned and am glad to hear that one of them, in any case, is to be shut up. This may be the thin end of the wedge and perhaps the places which I described as huge factories, where light and air are "sacrificed to increase the capacity of the plants," may also be closed, for presumedly the withdrawal of inspection means the closing of the establishment. It would be more satisfactory, however, if a positive statement were made to that effect.

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*Quotation from "The Lancet," Jan. 14th, 1905:—*

At the Chicago stockyards I could not but feel scandalised and humiliated when I saw the foul and abominable premises in which the representatives of science, the representatives of the United States of America, the representatives of the majesty of the law, condescended to work daily in the accomplishment of their mission.

*Comment of the U.S. Department:—*

The Federal inspectors in abattoirs are required to make a post-mortem examination of the animals at the time they are eviscerated and dressed. Under the most favourable conditions this work would not be considered by the majority of persons as being pleasant. There is, however, room for improvement in the facilities for the personal comfort of the inspectors at some of the plants.

*"The Lancet's" reply to the comment:—*

Here there is no attempt to disguise the fact that what I said was absolutely correct. When more is known concerning the management of model abattoirs it will be seen that the work can be made much more pleasant; that is, clean, free from bad odours, with bright healthy surroundings. But to those whose only experience is Chicago this would be beyond their powers of conception.

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*Quotation from "The Lancet," Jan. 14th, 1905:—*

As they (cattle) approach the outer wall, men strike them on the head with a mallet; then a sort of wooden partition gives way and lets the half-stunned animals fall into the basement of the building and beyond. As they come tumbling in, men seize their hind legs, affix ropes, &c.

*Comment of the U.S. Department:—*

The cattle are stunned in the knocking pens, after which a lever is pulled, causing the floor of the pen under the animal to tilt simultaneously with the lifting of the door. This permits the animal to roll out on the adjacent killing floor, a distance of about two feet below the level of the knocking pens. Should half-stunned animals fall any considerable distance, such as is inferred from the above paragraph, they would become so bruised as to lower their market value.

*"The Lancet's" reply to the comment :—*

Here is another attempt to make me say what I did not say. The idea that the animals might be bruised, that the packers would deliberately go out of the way to injure the quality of their meat, certainly never occurred to me. What I felt was that the process was dangerous and inhuman. Before cattle are struck a special headgear might be worn or the head should be roped down to such a position as would render it almost certain that the blow would be effective. In this case it often is not effective and I related that the animal on reaching the killing floor sometimes "jumps up and rushes about. It has then to be shot at the risk of the bullet striking an onlooker." It is this latter contingency which was the main purport of my complaint. But this part of my report is not quoted or denied. Further, in "The Jungle" it forms the turning point in the career of Mr. Upton Sinclair's hero, and the report of the Department of Agriculture seeks to refute this novel as well as my articles. The incident which I mentioned in a few bald words was subsequently described in the following graphic manner on p. 136 of "The Jungle." "A time of peril on the killing beds was when a steer broke loose. Sometimes in the haste of speeding-up they would dump one of the animals out on the floor before it was fully stunned and it would get upon its feet and run amuck. Then there would be a yell of warning—the men would drop everything and dash for the nearest pillar, slipping here and there on the floor, and tumbling over each other. This was bad enough in the summer when a man could see; in winter time it was enough to make your hair stand up, for the room would be so full of steam that you could not make anything out five feet in front of you. To be sure the steer was generally blind and frantic, and not specially bent on hurting anyone; but think of the chances of running upon a knife, while nearly every man had one in his hand! And then, to cap the climax, the floor boss would come rushing up with a rifle and begin blazing away It was in one of these *mêlées* that Jurgis fell into his trap That is the only word to describe it; it was so cruel and so utterly not to be foreseen. At first he hardly noticed it, it was such a slight accident—simply that in leaping out of the way he had turned his ankle." Thus rendered lame Jurgis loses his work and his downward career commences. The reporters of the Department of Agriculture have nothing to say to my few words and the graphic description of this brutal state of affairs as depicted in "The Jungle." The point to be answered is that we have here a method of slaughtering which involves cruelty to animals and peril to human beings. Instead of dealing with this, the real grievance raised both by Mr. Sinclair and myself, they start an imaginary point about bruises lowering the market value of meat. This, indeed, is typical of the psychology of all this special pleading. My plea for humanity, to man and beast, is met by the fear of lowering the market value of meat!

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

Then, when strung up, the machinery carries the living animal forward and men have to run after it to cut its throat.

*Comment of the U.S. Department :—*

The stickers employed by the packing-house firms to bleed the cattle are active and adroit but the committee observed that it was unnecessary for these men "to run after" an animal in order to cut its throat.

*"The Lancet's" reply to the comment :—*

Here, again, while practically admitting that what I say is correct a straining effort is made to condemn my use of the word "run." Perhaps the word "hurry" or "hasten" would have been more correct from the literal sense, though I think the word "run" conveys the truest impression. The "speeding of the pace" is so great that men are constantly running, though for distances of only three or four yards. However, if it can be of any solace to the Chicago packers and the United States Department of Agriculture I am quite willing to withdraw the word "run" and to put "hurry" in its place. But why waste time quibbling over such petty trifles when so many grave allegations of mine are passed in silence and remain unanswered?

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

Sometimes the cattle are struck down and stunned more quickly than the men can pick them up and cut their throats, so they are left alive and some time suspended in the air by their hind feet.

*Comment of the U.S. Department :—*

The only cases where live animals were observed to be suspended in the air by their hind feet were animals to be killed by the Jewish method of shechtering. When an animal is struck down and stunned it is unconscious, practically dead, and it was noted that only a few seconds elapsed between the suspension of such an animal and the time it was bled.

*"The Lancet's" reply to the comment :—*

I do not understand the point of this comment unless it be to pretend that an animal when stunned is not alive. The cattle I saw were all hung up by their hind legs and suspended from a contrivance on wheels high up near the ceiling before their throats were cut. Delay occurs before they can all be hung up. As the animals sometimes spring to their feet and charge their butchers before they are tethered it is evident that occasionally they are inefficiently stunned. I maintain that the length of time which elapses between the stunning and the bleeding is an unnecessary prolongation of suffering. It is therefore cruel and there ought to be a law for the prevention of cruelty. Such a disgraceful manner of slaughter would never be tolerated in a model European abattoir. And this, which was my real point, remains unanswered.

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

There are innumerable rafters, sharp angles, nooks, and corners where blood, the splashing of offal, and the sputum of tuberculous workers can accumulate for weeks, months, and years. It does not look as if the floors are ever really clean, though I am told they are occasionally scrubbed.

*Comment of the U.S. Department :—*

There are killing floors in Chicago which this quotation aptly describes without exaggeration. There are other killing floors which are kept as clean as the nature of the work will permit, with vitrified-brick floors, painted walls, and whitewashed posts and rafters. The floors of many of the killing departments and workrooms where meat is handled are scrubbed daily with caustic soda, pine tar, and boiling hot water, the floors then being dried with rubber squeegees and sprinkled with salt.

*"The Lancet's" reply to the comment :—*

Here what I said is admitted to be true and devoid of exaggeration. I visited the stockyards in November, 1904, and fancy that a great deal more hot water and caustic soda have been used after my visit than was the case before I wrote on the subject.

*Quotation from "The Lancet," Jan. 14th, 1905 :—*

Here is the evidence of the windows, about which there can be no doubt, and they are heavily caked with dirt.

*Comment of the U.S. Department :—*

The windows in some of the establishments are dirty ; in others clean. Some windows are caked with dirt on the inside, and others are only soiled on the outside by soot and dust.

*"The Lancet's" reply to the comment :—*

Again this is an acknowledgment of the correctness of what I said, though doubtless the present disclosures will have the good effect of causing the removal of the dirt denounced.

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

It is safer to buy meat from the small retail municipal slaughter-house of a petty provincial town than from the world-wide provision packers of Chicago.

*Comment of the U.S. Department :—*

Government inspection is maintained at practically all of the abattoirs in Chicago and during a single year many thousand diseased carcasses are condemned as unfit for human food and are converted into grease and fertiliser, thus insuring their destruction. If these animals were slaughtered in abattoirs in small towns where no inspection exists they would undoubtedly be used for food.

*"The Lancet's" reply to the comment :—*

Naturally some inspection is better than no inspection, but however small the provincial town it is impossible to conceive a municipal slaughter-house without inspection. The first object in creating municipal slaughter-houses is to facilitate inspection.

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

Close at hand there are closets, and they are in some places only a few feet from the food. These closets are at times out of order, deficient, defective, or even entirely devoid of flushing. They are all the more offensive as they are not sufficiently numerous for the large staff of workers who have to use them. This is especially the case in one of the rooms where soup is made for preserving in tins. In one department there were two closets, neither of which could be flushed, provided for 80 women, ..... Even to-day, after many protests and agitations, there are no lavatories for the workers to wash themselves conveniently and to change some of their clothes before they begin handling the food which is sent from Chicago to all parts of the world.

*Comment of the U.S. Department :—*

It is true that in a small number of establishments water-closets are located only a few feet away from the food product, not even separated therefrom by complete partitions, and in a small percentage of the total number of closets examined by the committee the arrangements for flushing were defective, and in the same small percentage of cases the closets were not sufficiently numerous for the number of workers who use them. Generally speaking, however, the closets were ample in number and the facilities for flushing were all right, but sufficient care is not taken to keep them clean and the location of many of them is bad. The above comments apply to the criticism of lack of lavatory and dressing room facilities. Many of the establishments have large and commodious dressing rooms for both the male and female workers and lavatories are generally provided for the women but there are few lavatories for the men.

*"The Lancet's" reply to the comment :—*

More than a year must have elapsed between the publication of my complaints as to the condition of the closets and the visit of reporters on behalf of the Department of Agriculture and yet they found that some of the evils I described still existed. As these are matters that can be promptly and easily rectified, that such abominations should have been allowed to exist for more than a year after they had been publicly denounced shows how little the packers care for cleanliness.

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

For instance, I was told that diseased and condemned carcasses which were put in at one end of the destructor to be converted into manure were promptly extracted at the other end and sold as meat.

*Comment of the U.S. Department :—*

For years rumours have been current that condemned carcasses, properly tanked, were reclaimed and sold for food. Careful precautions are taken to prevent this action. The condemned meat is required to be placed in the tanks in the presence of an inspector and the openings at both the top and bottom of the tank are sealed with Government seals and the steam turned on. The author himself in the same article says : "When a carcass, or a portion of a carcass, is condemned, in spite of stockyard gossip and scandal, I believe that it is conscientiously destroyed."

*"The Lancet's" reply to the comment :—*

There is now much reason to fear that if any part of my reports is incorrect it is precisely where for want of sufficient evidence I could not take upon myself to endorse the accusations, widely current, that diseased and condemned meat was not destroyed but sold for food.

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

So that when stories go round about the selling of diseased meat the persons who tell them are either deliberately inventing or, more probably, confusing an ordinary cauldron with the destroying tanks.

*Comment of the U.S. Department :—*

This statement is believed to be correct.

*"The Lancet's" reply to the comment :—*

There is something singular about the guarded vagueness and brevity of this comment.

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

Also I was told that bruised and rejected hams were nevertheless sold and put on the market by cheap butchers, or else the bone may be cut out and the discoloured portion of the flesh near the bone removed, the rest being utilised; again, when meat that has been put in brine for pickling is found to smell, hollow needles are driven into the flesh, and brine is pumped into the body of the meat. This saves the time of penetration, and men have assured me that when meat still retained an unpleasant odour the operation was repeated. Nevertheless, I find some difficulty in believing these stories.

*Comment of the U.S. Department :—*

Hams rejected by the Federal inspectors are not permitted to be sold. Hams of healthy animals which are slightly bruised may be trimmed and the normal portion used for food. It is the custom to inject the pickling or curing

solution into hams, shoulders, and other thick portions of meat to hasten the process of curing. The committee was informed that sour hams were classed as such and sold at a reduced price. The committee took several samples of the pickle used in these needles and an analysis by the Bureau of Chemistry showed that the pickle contained a trace of borax, probably from the salt, and large amount of nitrates, but no sulphuric acid or sulphites.

*"The Lancet's" reply to the comment :—*

On the whole question of the sale for food of condemned and diseased carcasses I might have written differently had I read in those days the evidence given by President Roosevelt concerning the canned beef from Chicago which the soldiers under his command had to eat during the war in Cuba. Nor had I then any knowledge of the affidavit of Mr. Thomas F. Dolan who held a high position and was employed for ten years in the stockyards. He swore that the beef cast into the destructors was extracted at the other end and brought back into the dressing-room; that he marked some of the carcasses with his knife to recognise them; and that the workman named Nicholas Newson was especially employed to rescue the condemned meat from the destroyers or rendering tanks so that it might not be lost. Still, this is a phase of the question on which the evidence of my own eyes was of no avail. It has been more fully developed by Mr. Sinclair in his novel and needs more explanation that has as yet been produced by those who seek to defend the packers.

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

They (condemned carcasses) are kept under the same roof on the same floor where food is being prepared for human consumption. Indeed, worse than this, the diseased carcasses are brought nearest to the windows so that there may be a better light to examine them. But, on the other hand, such air as may gain admittance into the huge building from these windows passes round, over, and between these diseased carcasses before it can reach the moist meat that is being cut up and prepared at a short distance.

*Comment of the U.S. Department :—*

In the case of hog carcasses which have been condemned for various diseases the final inspection is made on the hanging floor, usually near the windows, for the purpose of getting good light. This hanging floor is the room where the recently dressed carcasses are allowed to lose most of the animal heat before being placed in the coolers. No meat is cut up or prepared on the hanging floor. In all the abattoirs visited, with one exception, these condemned hogs are tanked directly from the hanging floor on the day of condemnation. In the case of condemned beef carcasses they are removed to the retention rooms, which are partitioned off from the coolers, sometimes by a solid partition, at other times by a slat partition, but always in such a manner that the air does not pass "round, over, and between these diseased carcasses" before it can reach healthy meat. No carcasses having putrefactive changes or unnatural odours are placed in these retention rooms. They are tanked at once.

*"The Lancet's" reply to the comment :—*

This, again, practically admits what I stated and the adding of further details does not alter my facts. It is admitted that meat which is going to be given out for food, since it is to be placed in the cooling-room, is on the same floor where diseased carcasses are hanging by the window. Therefore air entering by the windows does pass "round, over, and between these diseased carcasses" before it reaches the other and healthy carcasses that are about to be stored in the cooling-room previously to being sold for food. There is thus proximity between the wholesome and the unwholesome, whereas in all model abattoirs there is a quarantine station absolutely distinct and removed from the slaughter-house, where everything that is at all suspicious is at once taken and isolated.

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*Quotation from "The Lancet," Jan. 14th, 1905 :—*

When finally the carcass is taken to the destructor the opening of this tank—at least of the tank which I saw—is inside a large building in the floor, and round it many people were working. This place is dark, wet, and altogether in a most unsuitable condition for the handling of meat. Nevertheless, not only is human food prepared here but diseased carcasses, condemned as unfit for human food, are dragged through the compartment. The lid of the destructor is removed within a few feet of meat that is to be eaten. The promiscuity of the two occupations of examination and destruction of diseased carcasses and the preparing and cutting up or the washing of carcasses that are not diseased is most disgusting and reprehensible.

*Comment of the U.S. Department :—*

In some of the establishments the offal and fertiliser tanks are not sufficiently isolated. The committee saw no condemned carcasses being dragged through any part of a plant.

*"The Lancet's" reply to the comment :—*

Here again this abominable promiscuity between wholesome meat and condemned diseased carcasses is acknowledged to be a fact. Whatever the committee may have failed to see it is obvious that the diseased and condemned portions of meat had to be conveyed somehow or other to the fertiliser tanks which they admit are not sufficiently isolated.

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*Quotation from "The Lancet," Jan. 28th, 1905 :—*

Then there is a department where a considerable number of women pack tongues in tins. Just behind them these tins are soldered and this operation produces a great heat. Also close at hand jets of steam are discharged into other tins so as to sterilise them. And yet not very far off there are cold storage rooms.

*Comment of the U.S. Department :—*

This description fits one canning room but is unfair as a generalisation. The room mentioned is in bad condition, much worse than the writer in the Lancet states. In this room water is dripping on the heads of the female workers who wear cloths on their heads to protect them from the drip. The air is surcharged with steam and solder fumes. Partitions and a power fan would do much to remedy the conditions in this room. In other canning departments the committee found good light and ventilation; power fans to take care of steam, and conditions made as sanitary, pleasant, and comfortable for the workers as was possible.

*"The Lancet's" reply to the comment :—*

What are we to think of the reforming capacities of the Chicago packers? Here is a room visited more than a year after I was there, and instead of being improved we are told that "the room mentioned is in bad condition, much worse than the writer in the Lancet states." After such an acknowledgment it will not be easy to accuse me of exaggeration.

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*Quotation from "The Lancet," Jan. 28th, 1905 :—*

A partition would protect some of the women workers from the steam, but no one seems to care, and even so simple and inexpensive a device has not been adopted. Again, there is a blue paint employed to colour tins. Fine particles of this paint are blown about and have a distinctly irritating effect on the air passages, which predisposes them to more serious diseases.

*Comment of the U.S. Department:—*

"In the larger canning departments the painting of cans is done with a machine, through which the cans pass, and the paint is sprayed on them. From one of these machines vapour was observed to rise; from the other machines no vapour was discernible.

*"The Lancet's" reply to the comment:—*

I do not remember seeing machines for painting cans. It is to be hoped that they are an improvement and that the inspectors will have the power to stop them if they cause injurious vapours.

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*Quotation from "The Lancet," Jan. 28th, 1905:—*

This (spread of the bacilli of tuberculosis) is done by the boots of the persons going to and fro and by the pieces of meat which fall on the floor by the carcasses, notably of the big cattle, which are deliberately laid on the floor by the wheels of the trucks, &c.

*Comment of the U.S. Department:—*

It is conceded that if tubercle bacilli were present they could be spread by the boots of the workers, wheels of the trucks, &c., but the only place where the carcass is deliberately placed upon the floor is on the killing bed before the skin is removed. Facilities were observed for handling big as well as small carcasses and the inference that carcasses which are dressed are laid on the floor deliberately is incorrect.

*"The Lancet's" reply to the comment:—*

I did not say that carcasses were deliberately placed on all the floors but published the reproduction of a photograph showing a row of carcasses on a floor and said that pieces of meat fell on the floor. *Collier's Weekly* of April 22nd, 1905, contains some photographic reproductions of the interiors at the stockyards and one of them shows a large quantity of pieces of meat on the floor. Under the picture is the statement: "The meat on the tables and the floor is being prepared for market." Besides, in a comment on a quotation from "The Jungle" the reporters say: "The committee observed meat piled upon the floor in many places." I only said the meat *fell* on the floor, the commissioners say that it was *piled* on the floor, and yet they seem desirous of appearing to contradict me. One of the passages I wrote was worded as follows: "In these dark places the meat falls on the floor and comes in contact with the dirt from the boots of the workers and the bacilli from the sputum of a population among whom pulmonary tuberculosis is more prevalent than among any other section of the inhabitants of Chicago."

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*Quotation from "The Lancet," Jan. 28th, 1905:—*

As already explained, anything like a thorough disinfection of the premises is impossible and is never attempted.

*Comment of the U.S. Department:—*

The visits of the committee to the various abattoirs were unannounced and unexpected, but it was a common occurrence to note that workmen were engaged in cleaning the floors, benches, and various portions of the machinery. In some houses the killing floors were washed with equal parts of caustic soda and pine tar, followed by an application of hot, steaming water. In other houses caustic soda and hot, steaming water only were used, while in still other cases the odour of chloride of lime was noticed in the cleaning mixture. In visiting cutting and trimming rooms it was frequently noted that the floors and benches were dry and clean, and that salt had been sprinkled about for the purpose of keeping these rooms sweet and clean and of preventing any odours in case a crack or crevice contained blood or scrapings that were not reached at the time the parts were washed. The usual method of cleaning was to apply washing soda and hot, steaming water, after which the floors were dried with rubber squeegees. A jet of hot, steaming water had just been applied to the ferris-wheel scraper and accessories, sticking pens, and other portions of the killing floor of the house at the time of the committee's visit, and this observation was repeated at other times during the investigation. Nevertheless, this can not be considered as a thorough disinfection when the ceilings, rafters, &c., are not given similar treatment.

*"The Lancet's" reply to the comment:—*

No amount of washing will suffice. The floors and the walls to the height of about six feet must be watertight and the angles rounded off. Of course, there must be no rafters, and there must be plenty of air and light. In a word, the premises are utterly unfit for the purpose and should be vacated at once.

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*Quotation from "The Lancet," Jan. 28th, 1905:—*

The smallest scratch or cut (on the person of the worker) will result in blood poisoning if the wound is not at once treated with a strong antiseptic. Then there are the festering sores of the men who work in the ham-curing department and who are constantly plunging their hands and arms in brine.

*Comment by the U.S. Department:—*

Many employees were interviewed with reference to the healing of small wounds on their bodies, particularly on the arms and hands. They stated that blood poisoning was not feared nor was it prevalent among them. In fact, they made light of the suggestion. Furthermore, the hands and arms of numerous employees who work in brine were noted, but no festering sores were seen in any case, but only the bleached, shrunken appearance of the skin, which is always associated with work in water.

*"The Lancet's" reply to the comment:—*

All I can say is that general medical practitioners living in the district spoke to me about the prevalence of such sores and blood poisoning. Nor does the above comment positively deny their existence but it is always difficult to get evidence from workers who fear that any indiscretion may cause them loss of their employment.

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*Quotation from "The Lancet," Jan. 28th, 1905:—*

It may also be noted that the rendering vats are most dangerously placed. The lids are on the level of one floor, and the vat or tank is on the floor below. ..... It is asserted that several persons have thus met with an awful death.

*Comment of the U.S. Department:—*

After careful inquiry the committee was able to hear of only one workman who had fallen into a rendering vat. The body of this man was immediately recovered and buried. This accident occurred several years ago.

*"The Lancet's" reply to the comment:—*

This is just one of those sensational things that deeply impress the public mind because of its dramatic terror. The presence of rafters in most of the buildings is far more dangerous but does not strike the public imagination. More lives are lost through bad sanitation than from accidents. I was anxious to avoid mere sensationalism; nevertheless, so many persons spoke about it, and it was so obvious that the vats were dangerously placed, that I should have failed in faithfully describing what I had heard and seen without some allusion to this dreadful rumour. The above comment goes much farther. It gives no mere record of the current gossip; it positively affirms that a man did lose his life by falling into the destructor or rendering vat.

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*Quotation from "The Lancet," Jan. 28th, 1905:—*

Nevertheless, it will scarcely be credited, a large proportion of the stabling and cattle pens (in the Union Stock Yards) is on the bare earth. ..... Here and there ..... not to

prevent contamination ..... but to secure a better roadway, a firmer foothold, and to reduce the mud nuisance, a sort of rough wood pavement was put in. This is made of the trunks of trees cut horizontally. These little round logs are placed side by side. This backwoodsman's expedient has now been replaced by the use of bricks, but neither bricks nor blocks prevent the contamination of the subsoil.

*Comment of the U.S Department :—*

The Union Stock Yards at Chicago, Ill., contains 500 acres, about 50 of which are either covered by buildings or used for the storage of manure, lumber, &c. This latter portion, commonly known as "the dump," is the only area which is not paved or covered with flooring. Of the remaining 450 acres, an area comprising a very few acres, which includes the pens that are scarcely ever in use, is floored with planking and drained by box sewers. The remainder of the cattle pens, roadways, and alleys, comprising the vast area in daily use, is paved throughout with vitrified brick, having a low degree of water absorption. The moving of an office building permitted the committee to observe that the bricks adjacent to this structure were put down upon a substantial foundation. The drainage is good and the pens are kept as clean as the character of their use would permit.

*"The Lancet's" reply to the comment :—*

I have been informed that a great deal of pavement has been laid down since my visit to the stockyards. But surely the place where manure is stored should be rendered watertight if the subsoil is to be saved from contamination. Then and in the name of the most elementary principles of sanitation, how can cattle pens be floored with planks and drained into box sewers? However, I hope that there has been considerable improvement of late in regard to paving.

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*Quotation from "The Lancet," Jan. 28th, 1905 :—*

It is over the bare earth also that the railway cattle vans, laden with livestock, arrive and discharge their freight. ..... At Chicago the cattle step out on the bare earth, which they soil and contaminate.

*Comment of the U.S. Department :—*

The railway trucks and roadbed leading into the stockyards are similar to others throughout this country. The cattle are discharged from the cars on the wooden platforms and into the paved chute pens ; then they are taken through overhead driveways to the different portions of the yards.

*"The Lancet's" reply to the comment :—*

I described what I saw and repeat that I hope some improvement has been effected since I was there. Still, those who are technically interested should compare the description of the railway arrangements given in this comment with my account of the railway station at the municipal slaughter-house of Berlin published in THE LANCET of July 14th, 1904 (p. 101).

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*Quotation from "The Lancet," Jan. 28th, 1905 :—*

Pending their sale, the animals have no suitable stabling provided for them.

*Comment of the U. S. Department :—*

These yards are, as a rule, not covered, although the cattle are usually removed from them for slaughter or shipment during the day on which they are received.

*"The Lancet's" reply to the comment :—*

Once again my contention is recognised as correct and obviously the cattle cannot always be so quickly removed.

*Quotation from "The Lancet," Dec. 23rd, 1905 :—*

Protests have been made against the fact that the United States meat inspectors have to examine for trichinæ all the hog's flesh that is exported from Chicago to Austria, Germany, Denmark, and France, but that the hog's flesh exported to Great Britain or consumed in the United States is not so examined and guaranteed.

*Comment of the U.S. Department :—*

It is plain that this microscopic inspection is chiefly a commercial matter, and that it was instituted for the purpose of regaining an export market for American pork products which had been excluded from certain European countries. Americans usually cook their pork before eating, and thereby render the trichinæ harmless. As a result the outbreaks of trichinosis in this country are very few and chiefly among foreigners. Thus, Dr. Ch. Wardell Stiles states that from the beginning of 1893 to Feb. 7th, 1898, there have been 40 or 50 cases of trichinosis reported in this country. ("Practice of Medicine," William Osler, 1893, p. 356.) Furthermore, funds are not available to extend this microscopic examination, for to carry out such an inspection of the carcasses of all hogs slaughtered in official abattoirs would require an appropriation of about $4,110,000 for this purpose.

*"The Lancet's" reply to the comment :—*

This is another strange comment. Fancy struggling to prevent such a distressful disease as trichinosis chiefly for a commercial purpose. What has commerce to do with the question? It is a matter of humanity, not of commerce. It is a question of public health, not of European markets. As for expense, it is incurred in the poorest districts of Germany ; surely the wealthy Americans, with their multi-millionaires, ought to be ashamed of alluding to money when there are human lives to be saved. At Berlin the microscopists get 55 pfennings per hog. Supposing double were paid at Chicago it would only amount to a quarter of a dollar, or a shilling per pig. The only argument on the question that can be held is an argument for or against the contention of the German men of science who maintain that the microscopic examination of pork for trichinæ is necessary. This is first of all a question of trichinæ and their likely effect. Expense and commercial interests must only be considered afterwards.

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*Quotation from "The Lancet," Dec. 23rd, 1905 :—*

It would seem as if the two city inspectors of meat, in their newly-awakened zeal, had shown more perspicacity than the Government inspectors, who are appointed by the central authorities of Washington and whose special mission it is to protect those foreign and European countries which have legislated against the importation of trichinæ from Chicago. In any case, the report says, speaking of the condemned meat: "Among these animals were six cattle that had been passed by the Government inspectors. Two cattle were found last week by the department inspectors that had been passed by the Government inspectors after the evidences of tuberculosis had been trimmed out. The city inspectors destroyed these cattle. The Government inspectors refused to allow the city meat inspectors to remove glands and other organs suspected of being diseased for the purpose of microscopic examination by the laboratory bacteriologists."

*Comment of the U.S. Department :—*

The visit of the committee to Chicago developed the fact that the Department of Health of the city of Chicago had no written or printed regulations governing the inspection of meat. In one case where ten carcasses which had been passed by Federal inspectors and then condemned by the city were re-examined by Drs. Mohler and Steddom and other veterinarians, it developed that the condemnation by the city was improper and the head of the city inspection force stated that these condemnations had been made by a city inspector, who at the time had his discharge in his pocket and was "anxious to get even."

It is true that the relations heretofore subsisting between the city inspectors and the Federal inspectors at Chicago have not been as close as is desirable. This defect has now been remedied, however, and the regulations of the Bureau of Animal Industry, governing the inspection of meat, have been adopted by the city of Chicago.

*"The Lancet's" reply to the comment :—*

This quotation is not taken from my four reports which were published in January, 1905, but from THE LANCET of Dec. 23rd, 1905. It opens out a three-cornered problem—namely, the responsibilities, first, of the Federal inspectors ; secondly, of the old and obviously effete city of Chicago

inspectors; and thirdly, of the new and more efficient inspectors of the city of Chicago who began their work on August 7th, 1905. The latter decidedly accused the Federal inspectors of overlooking or allowing to pass carcasses which they should have condemned. Then the above comment shows that two of these Federal inspectors, Wohler and Steddom, have the same names, and these are not common names, as two of the three signatories of the report to the committee of the Department of Agriculture. If, as seems probable, they are the same persons, the question arises as to whether they are not too intimately and personally concerned in the matters at issue to be impartial reporters on the subject. In the last-mentioned and quoted article it is stated that in the week ending Sept. 23rd, 1905, 173,769 pounds of meat were condemned in the stockyards by the city inspectors, whereas during the corresponding week of the previous year only 2002 pounds of meat were condemned by the same authority. Other statistics are given to show that this disparity of figures is no exception applying to one particular week but is the general rule. Were the Federal inspectors Mohler and Steddom in office when only 2002 pounds were condemned in a week?

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*Quotation from "The Lancet," Dec. 23rd, 1905:—*

It [slaughtering] is grossly inhuman, because no effort is made to mitigate the apprehension and torture of the animal.

*Comment of the U.S. Department:—*

The method of killing one steer with the percussion mask, recommended by this writer, requires more time than would be consumed in killing eight similar animals with a sledge hammer. And the inhumanity that has been charged against the latter method, owing to the very infrequent necessity of striking more than one blow, would be more than offset by the fright and the struggles of our range cattle caused by fastening the mask to their heads. It would be a diverting spectacle to witness the effort to affix the mask to the head of a wild, long-horn Texas steer, but the fear and apprehension of such an animal would be greatly enhanced.

*"The Lancet's" reply to the comment:—*

It was in a previous article that I spoke about using a percussion mask but I did not recommend this. My exact words were as follows: "When I inquired why a leather gear was not affixed to the bullock's head with a nail so placed in it that, however clumsy the stroke given, it would cause the nail to penetrate the brain and instantly kill the animal, I was told that such a process would take too much time." The fact was, I desired to ascertain what technical objections there might be to this mode of killing and quite understand that a tame stable cow and a wild long-horn Texas steer may require different treatment. But the method selected must be chosen for its humanity and not because it requires less time. The days are as long in Illinois as elsewhere and the time given in poorer countries can be even more easily afforded in wealthy Chicago.

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After these 29 quotations from THE LANCET come 11 quotations from "The Jungle" which are likewise followed by comments. These latter Mr. Sinclair is well able to answer for himself. But there are some passages in the comments that bear on the question broached above. For instance, the reporters state that the Federal inspectors examine all carcasses "regardless of whether the meat is to be used locally, interstate, or for export." This I take it is a most alarming statement, because, as related in the last of my articles quoted, the Chicago city inspectors destroyed from August 7th to Dec. 1st, 1905, no less than 2,391,719 pounds of meat and fish and before August 7th only a trivial amount of meat was destroyed. But the Federal inspection was the same before as after August 7th, consequently it cannot have been very efficacious. How this may be is, perhaps, indicated in another comment meant to refute Mr. Sinclair's assertion that from 400 to 500 cattle are turned into meat in an hour. The reporters say:—

"In the larger abattoirs in Chicago there are from 16 to 28 beds or divisions of the killing floor. A force of workmen in one of these abattoirs may kill and dress about seven runs of cattle in an hour, which means an average of from 110 to 200 beef carcasses per hour, but never from 400 to 500 such carcasses."

To this I would remark, first, that, if I understand correctly, it means that from 15 to 30 cattle are stunned and dropped simultaneously through the sliding door on to the killing floor. I get this number by dividing from 110 to 200 by the seven runs of cattle. If I am right, then this figure confirms my charge of cruelty; for a considerable time must elapse before all the 15 to 30 cattle can be picked off the floor, hung up by their hind legs, and begin to travel along by means of the contrivance on wheels to which they are suspended. It is only as they thus move forward with their heads hanging downwards that men strike at their throats with knives. Indeed, it seems as if this operation took the seventh part of an hour, so that a seventh part of an hour may elapse between the stunning and the bleeding.

Secondly, we have seen that one single killing floor out of the 16 to 28 killing floors may turn out more than a thousand carcasses in a day. All these the inspectors must examine. According to the Prussian Minister of Agriculture, a veterinary surgeon should not have more than 20 animals to examine in one day. Does anyone imagine, for a moment, that there are enough Federal inspectors at the Chicago stockyards to do their work thoroughly? This explains why, when the meat to be consumed by the inhabitants of Chicago was properly inspected, the city of Chicago inspectors found that so large a quantity of unsound meat had been passed by the Federal inspectors.

Mr. Sinclair says that the people of Chicago "did not understand that these 163 inspectors had been appointed at the request of the packers, and that they were paid by the United States Government to certify that all the diseased meat was kept in the State."

This criticism applies to the pork which is kept for consumption in the United States and also in Great Britain, whether it has or has not trichinæ. But the other meat is supposed to be examined. The reporters in their comment in reply to the above passage say, "the meat sold to the people of Chicago, which comes from establishments having Federal inspection, receives precisely the same careful examination given to meat which is exported to Europe."

In my turn I object that when the town of Chicago really sought to protect itself the immense amount of meat which the Chicago city meat inspectors seized leads inevitably to the conclusion that the Federal inspection is very lax.

Much more might be said, but perhaps this is enough for the present. But why should officials and professionals, whose interests it is the object of THE LANCET to represent and to defend, appear before the public as if they held a brief on behalf of the Chicago packers? It is true that the reporters have very fairly and honourably acknowledged the accuracy of many things that I said, but they generally endeavour to follow such acknowledgment by some form of attenuation. They appear to be desirous of defending the packers rather than the cause of hygiene, which it is their business as health officials to endeavour to promote. This attitude I am at a loss to understand and it seems to be very unprofessional. When I wrote my reports on the Chicago stockyards I thought I was helping all the officials and all the inspectors to cope against abuses which it should be the purpose of their lives to remove.

# ROYAL INSTITUTE OF PUBLIC HEALTH: ANNUAL CONGRESS.

THE annual Congress of the Royal Institute of Public Health, of which His Majesty the King is patron, was held in Queen's College, Cork, from June 27th to July 3rd.

### *Presidential Address.*

The inaugural meeting was held in the large hall of Queen's College, where the President, Professor BERTRAM C. A. WINDLE, F.R.S., delivered his address. He said that if there was a country in the world which should be healthy, happy, and prosperous, filled with strong men and women, lusty children, and smiling homesteads, it was Ireland. In respect to health Ireland was, however, very far from being where it should be. Year by year the death-rate from tuberculosis was steadily declining in England and in Scotland and as steadily increasing in Ireland. Side by side with this advancing rate of mortality from tubercle there was an alarming increase in the number of the insane. Many attempts had been made to explain why Ireland should suffer so severely from these terrible scourges. Drink and bad housing might be factors in the cause but they did not explain everything. There was another factor which in England was not operative to anything like the same extent as it was in Ireland—namely, emigration—which year by year drained away the life-blood of the race in the shape of its youngest, its most promising, and its most valuable members. It has well been said that what was happening in Ireland was a survival of the unfittest and one might well ask what would be the fate of a stock farm where the best animals were sent away every year in large numbers and a large proportion of the comparatively unfit retained for the purpose of keeping up the breed. England perhaps owed Ireland a debt for industries destroyed in the past; but in this as in some other cases he thought it would be more profitable for the people to consider what they could do for themselves to ameliorate their position. He would like to ask the local authorities whether they were doing all that was in their power to stem the tide of disease? Were they taking all the advantages that they could from the Public Health Acts, from the Housing Acts, and from the other enactments? Were they making use of the provisions for the notification of disease and particularly of tuberculous disease from the ravages of which they were so severely suffering? Were they helping the medical profession in its struggle against the enemy by appointing bacteriologists in the towns and in the counties? Why, he asked, did Ireland wait for an excellent English society, like that which was paying it a visit, to take pity on the people of that country and stir them up to consider things which they ought to be considering for themselves? If the coming of the present Congress to Cork led Ireland to reflect on these things, and if, above all, it should lead to the formation of a society for Ireland, doing its useful work year by year in different parts of the island, then indeed they would have great reason to be grateful to the Royal Institute of Public Health for coming there.

### SECTION OF PREVENTIVE MEDICINE.

Mr. DENIS DEMPSEY DONOVAN (superintendent medical officer of health of Cork), the president of the Section of Preventive Medicine, in his opening address referred to the geological position of Cork as well as to the meteorological conditions prevailing in that city. Referring to typhoid fever, he said that the most important point in the improvement of the health of the city during the past 25 years was the great diminution of that disease, due in a large measure to the action of the corporation which had carried out many important sanitary improvements.

### *Supervision of Milk-supplies.*

Dr. E. W. HOPE (medical officer of health of Liverpool) read a paper on Directions of Possible Improvement in the General Supervision of the Milk-supply. He said that although admirable steps had been taken by the Local Government Board and the Board of Agriculture in this matter not one of them approached in importance the necessity of some central authoritative supervision of the milk-supply. Local authorities had power to make regulations for the control of cowsheds but in rural districts very few steps had been taken to put these regulations into force. There should be inspection apart from local authorities. After some discussion Dr. Hope proposed the following motion which was adopted:—

That in the opinion of this meeting powers should be conferred on county councils and city councils to appoint inspectors to supervise the production and transport of milk and that great advantage would attend the appointment by the Local Government Board or the Board of Agriculture of a staff of medical or veterinary inspectors to cooperate with the officers and the authorities named.

In the course of the discussion Mr. DONOVAN said that a great deal of difficulty lay in the way of dispensary medical officers in Ireland doing their duty in this matter, as if they were to carry out their duties thoroughly they would frequently have to prosecute their masters and their patients.

### *Port Sanitary Administration.*

Dr. J. WRIGHT MASON (medical officer of health of Hull) read a paper on this subject in which he advocated a more close and minute inspection of the food-supply and water-supply on board vessels. The powers at present invested in the Board of Trade for the inspection of food should, he said, be transferred to the port sanitary authorities. A motion was then carried to the effect that the clauses of the Public Health Acts or any other Acts relating to the inspection of foods should be extended to all port sanitary authorities.

### *Food Reform and the Prevention of Inebriety.*

Arising out of a discussion on this subject a motion proposed by Miss MAY YATES (secretary of the Food Reform League) was adopted which stated—

That this Public Health Congress recommends that an educational food campaign be started to spread scientific information about this important subject.

Ignorance about food, Miss YATES contended, led directly and indirectly to infantile mortality and physical degeneration.

### *Cheap Sanatoriums.*

After a discussion on this subject the following motions were adopted:—

1. That in the opinion of this Congress the time has come when the Government should encourage and contribute towards providing and maintaining a sanatorium for consumptives.
2. That it is desirable that every health authority should appoint a skilled bacteriologist whom any medical practitioner might consult in suspicious cases of consumption.

### *Prevention and Cure of Tuberculosis.*

Professor E. J. MCWEENEY contributed a paper giving an account of the defensive methods adopted in other countries against tuberculosis, its object being to enable the public health authorities in Ireland to submit for trial those methods which might seem most suitable to the conditions which prevailed in that country.

### SECTION OF BACTERIOLOGY AND CHEMISTRY.

Dr. ARTHUR E. MOORE (lecturer on bacteriology in Queen's College, Cork), the President of this section, spoke of the necessity of adopting means whereby the sale of diseased meat should be made impossible. With regard to tuberculosis he said that sanatoriums afforded the only chance to those suffering from this disease short of emigration to another climate.

### SECTION OF CHILD STUDY AND SCHOOL HYGIENE.

In this section Professor H. CORBY (Cork) read a paper entitled "Medical and Educational Aspects of our Schools—the Springs from which National Prosperity should Flow." The teacher, he said, should understand the elementary principles of sanitary science and strive to become an apostle and an evangelist of hygiene. School-rooms were fruitful sources of illness, much of which could be avoided by the most ordinary precautions and, indeed, the health of the whole community largely depended on the regulations and sanitary condition of our schools. Damp, ill-lighted, and dirty schools were forcing-beds for consumption and other diseases and he thought it would well repay the Government or the local authorities to provide periodical medical inspection of schools. He hoped that no one would think he was unfairly criticising the Irish schools, for he considered the national schools of Ireland had been so far the salvation of the country.

At the annual meeting it was decided that the next Congress should be held in the Isle of Man.

# Looking Back.

FROM

## THE LANCET, *SATURDAY*, July 12th, 1828.

FACULTY OF LAUGHTER NOT PECULIAR TO MAN.

Of all animated beings, man alone, it is generally believed, is endowed with the faculty of laughter; it being the external and natural indication of mental emotions of which it is said animals are not susceptible. Hence Milton, in his Paradise Lost:—

"Smiles from reason flow,
To brute denied."

The reverse of this opinion, however, is maintained on good authority. Le Cat affirms that he has seen the jocko both laugh and cry;* the ourang-outangs, exhibited some years since at Exeter Change, are said to have sometimes laughed when much pleased. But the last number of Brewster's Philosophical Journal contains the most conclusive evidence on this subject in a letter from Mr. Grant, giving an account of the structure, manners and habits, of an ourang-outang from Borneo. The writer says, that if the animal be tickled, "the corners of his mouth draw up into a grin; he shows his teeth, the diaphragm is thrown into action, and reiterated grunting sounds, somewhat analagous to laughter, are emitted."

In a note upon this subject it is stated the by original possessor of the animal, that with him and also with a young female, ourang-outang, he has observed, when not excited by any apparent cause, a contraction of the upper lip, showing the teeth, and a play of the features resembling a smile, *as if excited by some pleasant idea*. The female, when tickled (withholding her breath and struggling) would utter a half-suppressed sound, (which might be expressed by the letters *Khre*,) much in the same way as some individuals of the human species when placed under similar circumstances.

NON-EXISTENCE OF EPIDEMIC DISEASES IN NEW SOUTH WALES.

We remember some years since reading an advertisement for medical practice, in which the advertiser wished for "a healthy situation:"—he would have been *transported* with the subjoined intelligence. "With the exception of catarrh, there are no epidemic diseases known; and those complaints which are common to children, in Britain, such as measles, hooping-cough, small-pox, &c. have no existence in this climate."†

† Letter from New South Wales to Dr. Brewster, p. 119.

* Traité de l'Existence du Fluide des Nerfs.

## ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN extraordinary Comitia was held on June 28th, Sir RICHARD DOUGLAS POWELL, Bart., K.C.V.O., the President, being in the chair.

Licences to practise physic were granted to Neil John McLean, University of Manitoba, and to Harry Francis Golding Noyes, University of Cambridge and the London Hospital.

The following communications were received: 1. From the secretary of the Royal College of Surgeons of England reporting proceedings of its Council on May 10th. 2. From the Anthropological Institute inviting the College to join a deputation to the Prime Minister to urge the institution of a National Anthropometric Survey. It was resolved that the invitation should be courteously declined, the views of the College having been sufficiently expressed in a report to the Privy Council two years ago. 3. From the General Medical Council forwarding a copy of a report from the Students' Practical Midwifery Committee with recommendations and inviting observations from the College. The consideration of the report was deferred until the next Comitia.

A report was received from the representative of the College on the General Medical Council on the proceedings of the Council during its session in May last.

A report, dated April 23rd, was received from the Committee of Management and adopted. The report recommended—

1. That Dr. Theodore Dyke Acland be appointed the first assessor to the examinations of the Egyptian School of Medicine for the examinations to be held in December next.

2. That the course of laboratory instruction in public health given by Dr. William Hunter, Government bacteriologist, Hong-Kong, in the Government laboratory, be recognised as fulfilling the conditions of Clause 2, Paragraph II., Section II., of the regulations for the diploma in public health.

A second report from the same committee, dated June 11th, was received recommending that the Technical College, Sunderland, and the Municipal Day Technical School, West Bromwich, should be added to the list of institutions recognised by the Examining Board in England for instruction in chemistry and physics. The recommendations were adopted.

A report from the Conjoint Finance Committee was received and adopted sanctioning the expenditure necessary for remedying grave defects in the drainage and sanitary appliances of the Examination Hall.

The PRESIDENT then dissolved the Comitia.

## MEDICINE AND THE LAW.

*Jury of Matrons.*

RARELY of recent years has it been found necessary at the trial of a woman for murder to summon a jury of matrons, but such an event occurred at the last Bodmin Assizes when Carrie Thomes was convicted before the Lord Chief Justice of the crime of murder. When the ordinary jury of men returned into court with a verdict of "Guilty" the prisoner was called upon by the clerk of assize to plead in arrest of judgment and she pleaded in a clear voice that she was pregnant. The Lord Chief Justice said that this was not the proper time to urge that plea and proceeded to pass sentence of death. After sentence the prisoner by her counsel, as well as by herself, pleaded pregnancy and the judge thereupon ordered all doors to be shut and the sheriff to summon a jury of matrons *de circumstantibus*. This was done and the jury of matrons were sworn like a grand jury, the clerk of assize administering the oath in the following manner: "That you will diligently search and try Carrie Thomes, the prisoner at the bar, whether she be quick with child or not, and that your verdict shall be according to the best of your skill and knowledge." The jury of matrons retired for half an hour and they returned a verdict that she was "quick with a living child." The judge thereupon ordered that the sentence of execution should be respited until the child was born or until there was no possibility of a child being born. There are two cases, the one criminal and the other civil, in which the question whether a given woman is with child or not is submitted to the decision of a jury of matrons or other "discreet women." In the first case the use of this means of inquiry is obligatory and by the court; in the second, optional and upon the petition of a private litigant. The procedure is of high antiquity and is stated by Blackstone to have prevailed in the pleas of the Crown "as early as the first memorials of our laws will reach." In early ages, when medical knowledge was rare in amount and poor in quality, resort to a jury of matrons was, no doubt, the best and surest means of inquiry. Modern experience, however, does not justify the continued existence of a procedure which has often led to wrong results and for which the medical profession furnishes a more easily available, as well as a more trustworthy, substitute. The course usually followed is exemplified in Wycherley's case (8 Car. & P. 262). There Baron Gurney said: "Let all the doors be shut and no one be suffered to leave the court"—that is to say, to prevent the ladies present as sightseers from withdrawing and so declining an unwelcome office. At the trial of Catherine Webster, in 1879, the prisoner pleaded pregnancy, but unavailingly. The impanelling of a jury from among the lady sightseers on this occasion is said to have operated for a considerable time in diminishing the average attendance of lady spectators at the proceedings of the Old Bailey. The jury having been sworn withdraw with

the prisoner to make their examination. But they may desire, and will be accorded, the testimony of a qualified medical man, and probably in these days such testimony would in practice be considered indispensable. In Webster's case the verdict of the jury was given upon their own examination, and upon the evidence of Thyrza Belsham, one of the wardresses of Newgate, and Mr. Bond, the surgeon who examined the prisoner. Were this not so, grave mistakes would occur, such as in the past have occurred, for "perhaps there is no subject on which average women display greater ignorance than on questions connected with pregnancy" (Tidy's Legal Medicine, Part II., p. 107). The books make mention of an early case where a mistake was made in this matter at Aylesbury (1 Hale, P.C. 369). And in modern times mistakes have been made, e.g., in the Norwich case (R. v. Wright (1832), *Medical Gazette*, Vol. XII., p. 22), in which a jury of matrons wrongly found a prisoner not with child. If medical evidence is called, the jury, it has been held, must return into court and hear such testimony given publicly on oath. In strictness the question to be decided is not whether the prisoner is or is not *pariment ensient* (i.e., barely with child: having conceived, "but not with quick child"), but whether or not she is *ensient de vive enfant;* but in practice a jury of women will lean to mercy's side; for, says Lord Hale, "I have rarely found but the compassion of their sex is gentle to them in their verdict, if there be any colour to support a sparing verdict." In the Norwich case, however, a jury of matrons negatived the plea, though the woman was in the fifth month of her pregnancy. The reprieve is granted, not for the woman's own sake but *in favorem prolis*. And it holds good, at all events, until either the woman shall have been delivered or proved by the course of nature not to have been with child. The French law (Art. 127 of the Penal Code) is satisfied by medical evidence of pregnancy. In New York it is provided by statute that if there is reasonable ground to believe that a female defendant sentenced to death is pregnant a jury of six physicians shall be impanelled to inquire into the fact and if it is found by the inquisition that she is "quick with child" the execution is to be suspended until the governor issues a warrant directing it, which he may do as soon as he is satisfied that she is no longer "quick with child," or he may commute her punishment to imprisonment for life. In England the judges and lawyers who prepared the Draft Codes of the Criminal Code Bill Commission provided (Art. 531) for the abolition of the jury of matrons and the substitution in it for an examination of the prisoner by one or more registered medical practitioners.

# Public Health and Poor Law.

## LOCAL GOVERNMENT BOARD.

### ANNUAL REPORTS OF MEDICAL OFFICERS OF HEALTH.

*County Borough of St. Helens.*—Dr. John J. Buchan reports that considerable attention has been paid during the past year to the condition of the children attending the public elementary schools. Excluding the common zymotic diseases there were 625 cases under observation during 1905, and these comprised verminous conditions and sore heads, 137; ringworm, 29; itch, 6; eczema and other skin diseases and neglect, 238; sore eyes and ears, 72; non-notifiable infectious diseases (excluding measles), 116; and other causes, 27. These figures are sufficient to indicate what a very material benefit may accrue from a systematic attempt to obtain information with regard to the condition of school children and the resulting control cannot fail to exercise a good educational effect on parents and children alike. It may be hoped that supervision of this nature may result in greater cleanliness of the poorer classes and in an ultimate reduction of that great class of adults which may quite fairly be termed the offensively smelling class. If the education authorities can induce the children of this generation and, hence, the adults of the next to pay more attention to cleanliness and to take baths more frequently they will be doing an admirable service to public health and will be adding to the enjoyment of all classes, more especially in these days when class distinctions in the matter of travelling facilities, &c., are tending to disappear. As regards St. Helens, the council has decided to appoint a hospital-trained nurse to visit any houses where there are children suffering from conditions which are largely the consequences of dirt and neglect and in the case of one of the two schools in the borough a short anthropometric survey of the children was made in the course of which height, weight, physical defects, eyesight, and general nutrition were gone into. It is satisfactory to note that the nuisance caused by the emission of black smoke in St. Helens is, according to the statistics, diminishing year by year, there having been in 1905 out of the 396 observations made 14·9 per cent. in which there was an emission of black smoke for a longer period than five minutes, the percentages in the immediately preceding years being in 1902, 28·5; in 1903, 22·1; and in 1904, 16·9.

*County Borough of Sunderland.*—The corporation of this borough subscribes for two beds in the Durham Sanatorium for Consumption and since 1901 50 patients from Sunderland have been under treatment at this institution. The results have so far been as follows: four still under treatment, 26 dead, 17 well, one ill, and two untraced. Of the 26 who died the average duration of life after discharge from the sanatorium was two years. Dr. Henry Renney advocates the exclusion of children from school until five years of age and the education committee has passed a resolution to the effect that "children under the age of five years be not admitted to the public elementary schools in the borough where such admission would have the result of bringing the average attendance above the authorised accommodation." The corporation has recently appointed a lady health visitor, the results appearing to be quite satisfactory, and the medical officer of health, in the interests of a reduction in the infantile mortality-rate, suggests that the health department should be informed of the birth of a child before the expiration of the six weeks laid down by statute. As he points out, during the interval many of the children born have died, and could the mothers be visited shortly after the birth of the child a considerable saving in infant life might be effected.

*County Borough of Halifax.*—Dr. J. T. Neech, dealing in his current annual report with the subject of small pox, furnishes an instance of a case where a group of six attacks of small-pox apparently arose from the arrival at the post-office of a letter from the small-pox hospital. No town in the kingdom has, Dr. Neech states, a purer water-supply than Halifax, the corporation having wisely purchased the gathering grounds connected with the storage reservoirs. The water of one of these reservoirs is liable to exhibit considerable acidity at certain times of the year, especially during February and March but by the addition of lime to the water as it leaves the main reservoir this acidity has been largely neutralised and there have been no cases of lead poisoning during 1905. Dr. Neech thinks, however, that a little more lime might be profitably added to the water.

## VITAL STATISTICS.

### HEALTH OF ENGLISH TOWNS.

IN 76 of the largest English towns 8708 births and 3721 deaths were registered during the week ending July 7th. The annual rate of mortality in these towns, which had been equal to 13·2 and 12·4 per 1000 in the two preceding weeks, further declined last week to 12·3, and was lower than in any previous week of this year. During the 13 weeks of last quarter the death-rate in these towns averaged only 14·9 per 1000, and in London the rate in the same period was slightly lower—namely, 14·8. The lowest death-rates during last week in the 76 towns were 6·0 in Walthamstow, 7·0 in Leicester, 7·2 in East Ham, and 7·8 in Hastings; the rates in the other towns ranged upwards to 17·4 in Merthyr Tydfil, 19·1 in Rochdale, 19·6 in Wigan, and 20·2 in Wallasey. The 3721 deaths in the 76 towns showed a further decline of 43 from the low numbers returned in recent weeks, and included 406 which were referred to the principal epidemic diseases, against 380 and 372 in the two preceding weeks; of these, 122 resulted from measles, 92 from diarrhœa, 74 from whooping-cough, 46 from diphtheria, 45 from scarlet fever, 26 from "fever" (principally enteric), and one from small-pox. The deaths from these epidemic diseases were equal to an annual rate of 1·3 per 1000 in the 76 towns and to 1·4 in London. No death from any of these epidemic diseases was registered last week in Bolton, Croydon,

Plymouth, Northampton, Reading, or in ten other smaller towns, whereas they caused death-rates exceeding 3·0 per 1000 in Halifax, Salford, Coventry, Wallasey, Bootle, and Burnley. The highest death-rates from measles occurred in Wallasey, Manchester, Salford, Halifax, and Burnley; from diarrhœa in Devonport and Cardiff; and from whooping-cough in Coventry, Wallasey, Bootle, and West Bromwich. The 46 fatal cases of diphtheria included 12 in London, four in Manchester, three in Salford, three in Sheffield, and two in Newcastle-on-Tyne; and scarlet fever showed the largest proportional excess in Wallasey and Bristol. The 26 deaths from "fever" showed a further increase upon the low numbers in recent weeks, and included 12 in London, two in Portsmouth, and two in Preston. The fatal case of small-pox was recorded in Hull. The seven cases of small-pox under treatment in the Metropolitan Asylums hospitals at the end of last week showed a further decline from recent weekly numbers, and no new case was admitted during the week. The number of scarlet fever cases under treatment in these hospitals and in the London Fever Hospital on Saturday, July 7th, was 2767, showing an increase of 15 upon the number at the end of the previous week; 376 new cases were admitted during the week, against 380 and 366 in the two preceding weeks. The deaths referred in London to pneumonia and other diseases of the respiratory organs, which had steadily declined in the 11 preceding weeks from 399 to 132, further fell last week to 118 and were 14 below the corrected average for the corresponding week in the four preceding years 1902–05. The causes of 39, or 1·1 per cent., of the deaths registered in the 76 towns during the week were not certified either by a registered medical practitioner or by a coroner. In London the cause of each of the 1113 deaths was duly certified, as was also the cause in 54 other smaller towns, including Leeds, Bristol, Bradford, and Newcastle-upon-Tyne. The proportion of uncertified deaths showed, however, a marked excess in Liverpool, Birmingham, Preston, Bury, South Shields, and Tynemouth.

### HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 15·8, 16·0, and 14·5 per 1000 in the three preceding weeks, rose again to 15·3 in the week ending July 7th, and exceeded by 3·0 the exceptionally low rate in the 76 large English towns. The rates in the eight Scotch towns last week ranged from 10·6 and 11·0 in Perth and Aberdeen, to 16·7 in Glasgow and 18·0 in Dundee. The 524 deaths in the eight towns showed an increase of 27 upon the number returned in the previous week, and included 18 which were referred to diarrhœa, ten to measles, nine to "fever," eight to whooping-cough, four to diphtheria, one to scarlet fever, and not one to small-pox. In all, 50 deaths resulted from these principal epidemic diseases, showing a further decline of nine from the numbers returned in the two previous weeks; they were equal to an annual rate of 1·5 per 1000, which was 0·2 above the average rate during the week from the same diseases in the 76 English towns. The 18 deaths attributed to diarrhœa in the Scotch towns showed a further decline from recent weekly numbers and included eight in Glasgow, four in Dundee, and two in Paisley. Of the ten fatal cases of measles, also showing a decline from the numbers in recent weeks, five occurred in Glasgow and two in Edinburgh. The deaths from whooping-cough, which had been 15 and nine in the two previous weeks, further declined to eight, and included four in Glasgow and two in Aberdeen. All the nine deaths referred to "fever," of which six were certified as cerebro-spinal fever, were recorded in Glasgow, as were all the four fatal cases of diphtheria. The deaths in the eight towns referred to diseases of the respiratory organs, including pneumonia, which had declined in the four preceding weeks from 95 to 64, further fell last week to 52, and were 13 below the number returned in the corresponding week of last year. The causes of 18, or 3·4 per cent., of the deaths registered in the eight towns last week were not certified, the proportion of uncertified deaths in the 76 large English towns during the same week being only 1·1 per cent.

### HEALTH OF DUBLIN.

The annual death-rate in Dublin, which had been equal to 20·2 and 16·4 per 1000 in the two preceding weeks, rose again to 16·9 in the week ending July 7th. During the 13 weeks of last quarter the death-rate in the city averaged 21·4 per 1000, against 14·8 in London and 17·1 in Edinburgh. The 123 deaths of Dublin residents during last week showed an increase of four upon the low number in the previous week, and included four fatal cases of whooping-cough, whereas no death was referred to small-pox, measles, scarlet fever, diphtheria, "fever," or diarrhœa. Thus the four deaths resulting from the principal epidemic diseases were equal to an annual rate of but 0·6 per 1000, the rate from the same diseases last week being 1·4 in London and 0·5 in Edinburgh. The four fatal cases of whooping-cough showed an increase on the numbers returned in recent weeks. The 123 deaths from all causes in Dublin last week included 19 of infants under one year of age and 27 of persons aged upwards of 60 years. Five inquest cases and four deaths from violence were registered; 41, or 33 per cent., of the deaths in the city were recorded in public institutions, the proportion in London being 43 per cent. The causes of three, or 2·4 per cent., of the 123 deaths were not certified by a registered medical practitioner or by a coroner, the proportion of uncertified deaths in Edinburgh last week being 7·8 per cent., while in London all the causes of death were duly certified.

## THE SERVICES.

### ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Fleet Surgeons: J. W. Slaughter to the *Swiftsure* and J. Bradley to the *Royal Oak*. Staff Surgeon: E. A. Shaw to the *Hecla*. Surgeons: J. G. Wallis to the *Hecla*: M. W. Haydon to the *Swiftsure*; E. Cameron, P. F. Minett, and H. A. Browning to the *Virid*, for disposal, to be lent to Plymouth Hospital; F. G. Goble and J. Bourdas to the *Pembroke*, for disposal, to be lent to Chatham Hospital.

### ARMY MEDICAL STAFF.

Surgeon-General William H. McNamara, C.B., C.M.G., is placed on retired pay (dated June 29th, 1906); Colonel Francis W. Trevor, from the Royal Army Medical Corps, to be Surgeon-General, vice W. H. McNamara, C.B., C.M.G. (dated June 29th, 1906).

### ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel John G. Harwood to be Colonel, vice F. W. Trevor (dated June 29th, 1906); Lieutenant Alfred S. Millard resigns his commission (dated July 7th, 1906).

Lieutenant-Colonel William J. Macnamara, retires on retired pay (dated July 11th, 1906).

Captain R. E. G. Phillips is appointed for duty in the London district. Colonel G. W. Robinson has assumed the duties of Administrative Medical Officer, Colchester District, vice Surgeon-General W. B. Slaughter, A.M.S., who embarks for India. Lieutenant G. H. Rees is posted for duty at Portsmouth. Captain S. A. Archer will arrive for duty in Ireland at the end of July and is posted for duty in the Dublin District.

### ARMY MEDICAL RESERVE OF OFFICERS.

The undermentioned Surgeon-Majors to be Surgeon-Lieutenant-Colonels (dated July 3rd, 1906):—William Nettle and James Turton.

### VOLUNTEER CORPS.

*Rifle:* 2nd Volunteer Battalion the King's Own (Royal Lancaster Regiment): Arthur Henry Falkner to be Surgeon-Lieutenant (dated June 30th, 1906). 2nd Volunteer Battalion, The Royal Scots Fusiliers: Robert Nelson to be Surgeon-Lieutenant (dated June 30th, 1906).

### EXAMINATION OF MAJORS IN THE ROYAL ARMY MEDICAL CORPS FOR PROMOTION.

The July Army Orders state that: "For 1907 the subjects for the examination of majors for promotion to lieutenant-colonel will be: Subject 3 (*a*).—The medical history of the more important campaigns and the lessons to be learnt therefrom:—The medical history of the Afghan campaign, with especial reference to the march from Cabul to Kandahar; and the medical history of the advance of Lord Roberts to Bloemfontein."

### DEATHS IN THE SERVICES.

Surgeon-Major Hampden H. Maclean, A.M.D. (retired), on June 24th, at Northampton, aged 74 years. He joined the service in 1858, was promoted to surgeon-major in 1873, and retired in 1878.

Lieutenant Walter Hyde Hills, R.A.M.C., on June 23rd, at Cawnpore, India, aged 28 years. He entered the service as a lieutenant in July, 1904.

### ARMY ADMINISTRATION.

At the moment of writing the air is full of unauthenticated rumours regarding the changes and economies about to be carried out in the army and political interest is, so to say, on the tiptoe of expectancy to learn what these are to be and what, in short, is to be our future army policy. The Secretary for War will be making his statement in the House just as we are going to press and consequently too late for us to notice whether any changes affecting the army medical services are announced. As it happens the unrest which has arisen in both North and South Africa at the present moment must be a source of some embarrassment to a statesman bent on carrying out any big and bold scheme of army economy.

### STRIKE OF HOSPITAL STAFFS.

Under the above heading the correspondent of the *Standard* describes a remarkable state of affairs at Odessa. He writes that at noon yesterday (July 7th) "the whole attendant staffs, numbering 760, including the cooks, of the city hospitals, declined to proceed with their work and abandoned 3000 patients. The strikers carried off the keys, stores, medicaments, &c., and fearing their violence the hospitals were surrounded by the military. The doctors and voluntary helpers in the hospital are praiseworthily doing their utmost to minimise the patients' sufferings. This strike is reprobated by the public."

### THE NAVAL MEDICAL SUPPLEMENTAL FUND.

At the quarterly meeting of the directors of this fund held on July 10th, Sir J. N. Dick, K.C.B., being in the chair, the sum of £55 was distributed among the several applicants.

# Correspondence.

"Audi alteram partem."

## STREET AMBULANCE SERVICE.

*To the Editors of* THE LANCET.

SIRS,—The decision arrived at within the last few days by a Parliamentary Committee to expunge the Ambulance Clauses of the L.C.C. General Powers Bill (1906) will doubtless have the effect of postponing any further action by the County Council for at least 12 months. It is now more than two years since a large proportion of the medical profession resident in London, which includes, as you state in your article last week, most of the leaders and heads of the profession, under the name of the Metropolitan Street Ambulance Association, urged upon our municipal authorities the pressing necessity for an ample and efficient ambulance service for its streets.

Nothing worth speaking of has yet been done to remedy this defect, though the matter has been repeatedly discussed by the London County Council, the Corporation of the City of London, the Metropolitan Asylums Board, and other public bodies. It would be very desirable to know upon what grounds the Committee of the House of Lords threw out the clauses in the Bill to which I have referred. It should be no secret, if progress is to be made, why Parliament refuses to permit the municipal authority of the metropolis to have the necessary enabling powers for dealing with that which for some time past has been, and still is, a grave reflection on the foresight and humanity of its citizens. In a matter of this kind time *is* pressing, the metropolis continues to grow, and additional factors are daily being included amongst those dangers of the streets of which the recent tramcar collision at Highgate is a disastrous example.

I am, Sirs, yours faithfully,

July 9th, 1906. REGINALD HARRISON.

## A LOCAL CENSUS.

*To the Editors of* THE LANCET.

SIRS,—In connexion with an annotation in THE LANCET of June 30th under the above heading it may be of interest to state that the corporation of this city carried out an unofficial census in 1897 and again this year; the reasons for this were mainly that a sudden wave of prosperity in certain local trades had been accompanied by unwonted immigration and this had rendered the Registrar-General's estimate of the population unreliable. On both occasions the population was found to be underestimated, In the recent census the population was found to be 83,792, while the Registrar-General's estimate put it at 76,374. In the light of this information it has been possible to correct the estimated population for 1905; the correction shows that the death-rate was 13·7 instead of 14·8, the birth-rate 26·5 instead of 28·9, and the death-rate from seven infectious diseases 1·38 instead of 1·47.

The method adopted was the division of the city into 88 enumeration areas, each enumerator being furnished with a book; the particulars obtained were the numbers below three years of age, between three and five, between five and 14, and over 14, the number of rooms in each house, and the rent. The total expenses of the census amounted to £87 10*s*.

The fact of the census being taken on a certain day was extensively advertised and householders were informed that the information obtained would be regarded as confidential and would not be used against them in the event of overcrowding. In spite of this it is clear that such information being voluntary an unofficial census of this sort is liable to greater error than the official census and the error is probably in the direction of under-statement of the population. The great discrepancy shown between the figures obtained and the official estimate affords a very strong argument in favour of a quinquennial census.

I am, Sirs, yours faithfully,

E. H. SNELL,
Coventry, July 10th, 1906. Medical Officer of Health.

## THE TREATMENT OF PULMONARY TUBERCULOSIS.

*To the Editors of* THE LANCET.

SIRS,—In my reading of THE LANCET I find that you have very full and clear accounts of what is being done throughout the world in the prevention and treatment of tuberculosis, but apparently the work of the New York Post-Graduate Medical School in this direction has not as yet come under your notice. May I, therefore, present a few facts which perhaps will be of interest to your readers?

In the winter of 1897–98 Dr. John F. Russell of this city asked of the directors of the New York Post-Graduate Medical School that he might be allowed to put a few working people under treatment for tuberculosis in its dispensary. He wished to make an experiment to determine if proper care would cure tuberculosis in the early stages while the patients were still able to be about their daily work. The request was granted. It was arranged that the visits of the patients should be made in the early morning before work hours and in the evening after they had finished. No care of those who could not comply with the condition of two visits daily would be undertaken. In these morning visits the patients were made, in the presence of the nurses and attendants, to take the proper doses of mixed fats, an emulsion made by Dr. Russell, which contains 42 per cent. of fat, made of beef fat, cocoanut, peanut, and olive oil, equal parts, with about two drops of clove oil to each ounce of emulsion. It was also stipulated that the patients should be able to supply themselves with sufficient food of an ordinary quality at their home. There was no supervision of the food, clothes, and habits, except as to expectoration, sleeping in bad air, and so forth. No objection was made to any particular occupation. None but selected cases were accepted. Those having cavities were excluded and also all cases where a large amount of lung tissue was involved, even although there were no large cavities. Cases complicated with other diseases, such as bronchitis, emphysema, diseases of the kidneys, heart, and liver, were also excluded. And no patients were to be admitted whom the supervising committee appointed by the executive committee of the Post-Graduate Medical School and Hospital should regard as doubtful cases. They must be proved by the laboratory to be genuine cases of tuberculosis.

Matters have gone on very well in the dispensary. Although Dr. Russell has given up the care of it it is still maintained by the Post-Graduate School, and carried on by Dr. William Jay Mersereau, who has been for some time an assistant to Dr. Russell, one of the staff of the New York

Post-Graduate Medical School and Hospital. Ten reports were published, signed by the committee, stating the results of the treatment. Up to this point there have been 55 apparent cures in the dispensary in a space of about eight years. In addition to the work in the dispensary in 1905, through a gift of a sum sufficient to maintain a house called the Tuberculous Annex for two years, it has been carried on and in-patients to the number of eight may be, and are, treated in this place. The scope of Dr. Russell's work has been largely increased. In addition to eggs, milk, and Russell's emulsion, what is called vegetable food is given at the dispensary. This is prepared by taking equal parts by weight of raw vegetables, which after thorough washing by scrubbing with a brush and rinsing in fresh water (the skins are not removed) are mixed together and chopped in a chopping bowl until the particles are small enough to go easily into the receiver of the grinding machine where the mass is reduced to pulp. The pulp is collected as it falls from the machine and the juice squeezed out through coarse muslin cloth. To obtain the best results the machine should tear and grind rather than cut. Sausage or meat-chopping machines do not answer the purpose as well as peanut butter-making machines. In the latter machines two steel discs, ribbed, one of which revolves, face each other and are so arranged that the coarse vegetable material is fed in at the centre and after travelling the width of the plates escapes as pulp at the circumference. The hand machines are not expensive, can be adjusted to any table, and are easily kept clean.[1]

The vegetables first used were potato, onion, beet, turnip, cabbage, and celery. Later, sweet potato, apple, pine-apple, carrot, and parsnip; and still later, rhubarb (pie plant), summer squash, tomato, spinach, radishes, string beans, and green peas with the pods were added. The juice is prepared every day and kept on ice. In the treatment by over-feeding as practised by means of the emulsion and eggs it is found necessary to use cathartics quite regularly in order to counteract the effects of the large doses of fats. This vegetable juice has been found to be useful in two ways, to prevent inordinate doses of cathartics and also to assist the action of the fats, just as in what are assumed to be analogous conditions of scurvy patients are treated with acids and vegetables. Time enough has elapsed since the inauguration of the dispensary to say that a certain proportion of those under treatment are cured and this is also true of the more serious cases which are now treated in the annex.

This great problem of the cure of consumption cannot be solved in our country by sending patients to different air, to sanatoriums, for the simple reason the patients are not able to pay their expenses away from home. As the readers of THE LANCET very well know from the recent lectures by Professor Robert Koch, he affirms that the greatest difficulty in the way of stamping out tuberculosis is the want of money. The sum of money necessary to care for all the tuberculosis patients in a hospital or even in dispensaries is so large that the end which the hospitals and dispensaries should finally reach will not be attained for many a long year on account of the want of money. There are not sanatoriums enough being everywhere provided for such patients, while there are many doubts if sanatoriums are the best places for working people, since it has been lately stated, if not shown, in this country that the cured working people come back flabby and really unable to work, so that the cure is only temporary and of no practical benefit. As is well known, there has come to be a wide difference of opinion in the profession as to how much is needed in the way of change of air for the cure of pulmonary phthisis. The patients coming to the dispensary are instructed by printed and verbal instructions, given them by a trained nurse, as to the conditions of living, necessity of avoiding spitting, and so forth, so that in their homes a great improvement is made in the prevention of new cases, but they live in ordinary tenement houses in a crowded city.

The experiments that have been conducted in the dispensary treatment of consumptive working people, without interruption to their work, are no longer doubtful ones. Every effort is being made to persuade the organised dispensaries in all cities and towns to treat self-supporting consumptive working people and influence the philanthropic to organise such dispensaries in sufficient numbers to care for all wage-earners who are consumptive. The ordinary dispensary treatment in this country for patients with tuberculosis has been universally as follows. The patients are received, a diagnosis made, and if in teaching dispensaries and hospitals their cases are shown to the classes and instruction is given based upon them. They are given cod-liver oil, iron, and expectorants possibly in some cases. The dispensary hours are usually in the afternoon or at a late hour in the morning. If any of those coming to the dispensary are working people they must suffer an interruption or loss of a day quite often to carry on the treatment. As far as outsiders can see there is absolutely no hope in the minds of the physicians of curing these people, although the cod-liver oil assists in maintaining nutrition and in lengthening their lives.

The idea of the dispensary and annex connected with this institution is to demonstrate what now appears to be a fact, that patients may be cured under the conditions that have been indicated. It is certainly important that the work should go on until it can be settled beyond question whether or not it is worth while to treat consumptives in this way. A dispensary in imitation of that connected with the Post-Graduate Medical School has been founded for the treatment of tuberculosis in this country in Richmond, Virginia. The principles upon which this experimental dispensary and annex are maintained by the Post-Graduate School may be stated as follows: first, in the dispensary the patients must all be still able to earn their living; second, they must be able to sustain themselves with ordinary food; third, they must actually have tuberculosis, but no other grave constitutional disease; and, fourth, they must come regularly to the morning and evening clinics and while there take the nourishment given to them, in the presence of the nurses, in a leisurely way.

The treatment in the annex is while the patients are in bed and the temperature is usually maintained at that of the ordinary temperature outdoors, so that the patients are really living and sleeping in the open air.

I am, Sirs, yours faithfully,

D. B. ST. JOHN ROOSA, M.D., LL.D.

New York, June 23rd, 1906.

[1] A good machine for the purpose is called the Quaker City Mill, f. 4, and is made in Philadelphia.

## EPIDEMIC CATARRHAL JAUNDICE.

*To the Editors of* THE LANCET.

SIRS,—The term catarrhal jaundice is usually applied to that form of obstructive jaundice caused by catarrh, acute or chronic, of the bile-ducts sufficiently severe to cause obstruction, more or less complete, of the terminal portion of the common duct. Catarrh of the bile-ducts is stated to be due in most cases to an extension of catarrhal inflammation either from the gall-bladder on the one hand or the duodenum on the other; it is also associated with certain acute illnesses—e.g., pneumonia, influenza, the specific fevers, &c. In the series of cases recorded below these antecedent conditions were absent. The infectious nature of the disease is very clearly shown, although the exact method of infection and the nature of the contagion are obscure.

The fact that catarrhal jaundice sometimes occurs in epidemic form is noted by Osler in his "Text-book of Medicine" but the interesting point to determine is whether such epidemic catarrhal jaundice is a local manifestation of a general infection or whether it is essentially a local disease. The symptoms in each case were practically identical—viz., those of simple catarrhal jaundice. The patient complained of general malaise, headache, constipation, loss of appetite, and some nausea, with actual vomiting in two or three cases. About the third or fourth day the jaundice appeared with the conditions usually associated with it—viz., bile in the urine and clay-coloured stools. The temperature was invariably raised to some extent, varying from 100° to 101° F., falling gradually in three or four days to normal. The jaundice cleared up rather more rapidly than is usual and the patient was quite well and free from all symptoms and signs of the illness within three weeks of the onset in each case. The following brief notes of each case give the history of the epidemic.

CASE 1.—A lad, aged 18 years, was not under my care but I was informed by his employer that he had a mild attack of jaundice during the second week of September, 1905.

CASE 2.—A lad, aged 18 years, living in the house where Case 1 was employed; the illness began on Sept. 18th and ran the typical course described above.

CASE 3.—A boy, aged 16 years, brother of Case 2 and living in the same house; the illness began on Oct. 4th.

CASE 4.—A young man, aged 23 years, brother of Cases 2 and 3, but resident at a farm about three miles away; the illness began on Oct 9th.

CASE 5.—A young man, aged 25 years, brother-in-law of Cases 2, 3, and 4, resident at a farm about two miles from Cases 2 and 3 and an equal distance from Case 4. Illness began on Oct. 24th.

CASE 6.—A girl, aged 20 years, sister of Cases 2, 3, and 4, and resident in the same house as Cases 2 and 3. The illness began on Nov. 1st. This case was complicated by the fact that the patient was convalescent from scarlet fever, the rash of which appeared on Oct. 9th. It seems unlikely, however, that the jaundice was due to the specific fever, as it did not appear until three weeks after the onset of that illness. It is worthy of note that the somewhat rare symptom of xanthopsia, or yellow vision, was present in this case.

The following cases were not connected with those recorded above but illustrate the point of the infectious nature of the disease.

CASE 7.—A girl, aged 15 years; illness began on July 11th, 1905.

CASE 8.—A lad, aged 17 years, brother of Case 7, but resident at a farm two miles away; illness began on Oct. 27th.

In the first six cases it will be noticed that four occurred in persons living or employed in the same house, while the others, though resident several miles from the house and from each other, were relatives, and visited the house from time to time.

I had several other cases of simple catarrhal jaundice in the district at intervals during the six months from July, 1905, to January, 1906, but I could trace no connexion between them or the series recorded above.

I am, Sirs, yours faithfully,

T. EDWARD SANDALL, B.A., M.B., B.C. Cantab., M.R.C.S Eng., L.R.C.P.Lond.,
Medical Officer of Health of Alford.

## STANDARDISATION OF DISINFECTANTS: PERPLEXITY.

*To the Editors of* THE LANCET.

SIRS,—As a public official advising a local authority upon health matters I am, indeed, somewhat perplexed respecting the best test to apply to find out the germicidal power of disinfectants. I have had placed in my hands a list of disinfectants with their carbolic acid coefficients quoted, at the foot of the list being the signature of a well-known author on the "Standardisation of Disinfectants." Among the various disinfectants is one which contains the disinfectant properties of chlorinated lime, the carbolic acid coefficient being stated as *nil*, and the test when applied to this chlorinated lime disinfectant, also with some other disinfectants, is stated to have been made in the presence of organic matter, the nature and quantity of such organic matter not being mentioned. I notice in the list that carbolic acid and other disinfectants have not been tested in the presence of organic matter, and yet the disinfectant with chlorinated lime properties and tested in the presence of organic matter (nature and quantity not stated) is compared with them. I also notice in the list that perchloride of mercury is stated to have a carbolic acid coefficient of 20, but the test has not been made in the presence of organic matter and this is compared to the disinfectant with chlorinated lime properties.

Now, Sirs, to increase my perplexity I find in a recent issue of a well-known weekly journal, no doubt read for the most part by municipal engineers, surveyors, and medical officers of health, all of whom have charge of the public health and have to advise their local authorities, that this same disinfectant with the properties of chlorinated lime has a carbolic acid coefficient of 21 and the test in this instance has been made by a physiologist and bacteriologist of great eminence. I am indeed perplexed, as I have always understood that tests for comparisons to obtain the carbolic acid coefficient are made with cultures in broth and *sterilised* water.

I inclose you the copy of the weekly journal in question and give below the list of disinfectants with their carbolic acid coefficients. As the list was handed to me as one which is given to the public you can imagine my perplexity.

I am, Sirs, yours faithfully,

FREDK. WM. ALEXANDER,
Medical Officer of Health.

Public Health Offices, Bow-road, E., June 20th, 1906.

THE LIST OF DISINFECTANTS.

*Bacteriological Test.*

*Method.*—To five cubic centimetres of a particular dilution of the disinfectant in sterilised water add five drops of a 24 hours' blood heat culture of the organism in broth; shake and take subcultures every two and a half minutes up to 15. Incubate for at least 48 hours at 37°C. For further particulars see *Journal of the Royal Sanitary Institute*, vol. xxiv., part 3, p. 424.

| Sample. | Organism. | Carbolic acid coefficient. |
|---|---|---|
| Perchloride of mercury | B. typhosus. | 20·00 |
| Cyllin (medical) | ,, | 17·00 |
| Cyllin | ,, | 13·00 |
| Creolin | ,, | 2·50 |
| Lysol | ,, | 2·50 |
| Pearson's antiseptic | ,, | 2·50 |
| Zotal | ,, | 1·30 |
| Carbolic acid | ,, | 1·00 |
| Lozar | ,, | 0·50 |
| Formalin | ,, | 0·30 |
| Chinosol | ,, | 0·30 |
| Chloride of zinc | ,, | 0·15 |
| Lysoform | ,, | 0·10 |
| Listerine | ,, | 0·03 |
| Sulphate of zinc | ,, | 0·02 |
| Sanitas | ,, | 0·02 |
| Boric acid | ,, | *Nil.* |
| Hydrogen peroxide | ,, | **Nil.* |
| Condy's fluid | ,, | **Nil.* |
| Permanganate of potash | ,, | **Nil.* |
| Chloride of lime | ,, | **Nil.* |
| Chloros | ,, | **Nil.* |

* In the presence of organic matter.

April, 1906.

## THE TREATMENT OF CEREBRO-SPINAL MENINGITIS.

*To the Editors of* THE LANCET.

SIRS,—In the last nine weeks I have been brought in contact, directly or in consultation, with eight cases which I now believe to be cases of this disease. I had not seen a typical case since 1883 (in Vienna), but these cases have so closely resembled the pictures of the complaint lately drawn in many recent articles in the medical press (especially in THE LANCET of June 30th, p. 1815, by Dr. W. Wright and Dr. W. Archibald) that I cannot doubt their identity. There should now be no difficulty in recognising the condition even by a practitioner who has never seen a case of the complaint. But it is in regard to a logical treatment of the condition that I wish to draw attention. That the disease is specific goes without saying. The special micrococcus is recognisable and has been identified in numerous cases, usually by lumbar puncture. I wish, however, to question the special therapeutic value of this procedure. All the earlier clinical symptoms point to a localised infection of the upper spinal and basal meninges. Pressure from serous exudation explains all the symptoms present, including the auditory and ocular symptoms; all primarily irritative, and later paretic or paralytic, as the pressure increases. Relief of tension is, therefore, the first point of importance in treatment, and this I find is best obtained by the free use of leeches applied to the mastoid and posterior cervical regions repeatedly (a dozen or more at least) according to how much the symptoms may subside. This apparently resulted in early recovery in four cases.

But considering how many cases relapse and in how many local blood-letting is insufficient I wish to offer a suggestion for treatment more closely directed to the affected region than lumbar puncture (which appears to be the classical

method) and equally safe. I refer to cervical laminectomy. The fifth cervical lamina is easily accessible on either side, according to the lateral displacement, if cervical retraction be present, and should be exposed and turned upwards, leaving its upper periosteal attachment. After evacuation of the compressed serum a capillary drain should be introduced (of well-matured catgut which does not require subsequent removal) and an absorbent dressing applied. I do not think intra-meningeal irrigation with normal or antiseptic fluid necessary, as the fatal symptoms indicate mechanical pressure not toxic poisoning, if one may judge by the temperature and pulse.

I have not yet had an opportunity of employing this method, but should feel safely justified in so doing in a suitable and necessary case. With a laminar bony valve over the aperture undue leakage is preventable by local pressure. The method presents little difficulty or danger and may be helpful where other means have failed. Medically, bromide of ammonium with small doses of iodide of potassium and chloral hydrate mitigate the irritative symptoms but leave tension unrelieved.—I am, Sirs, yours faithfully,

A. W. HARE, M.B. Edin.

Newquay, Cornwall, June 29th, 1906.

## THE DIAGNOSIS OF TUMOUR OF THE UNCINATE REGION.

*To the Editors of* THE LANCET.

SIRS,—One of the cases recorded by Dr. Thomas Buzzard in his clinical lecture (published in THE LANCET of June 30th) is so like one seen by myself and the symptom-complex of these two cases is so rare and interesting that I venture briefly to describe my own for comparison. Dr. Buzzard's case was that of a man, 60 years of age, who had several seizures, in which he heard a sound like the clang of a piano, experienced a very disagreeable smell, and was obliged by a feeling of faintness to lie down. In the course of time left hemiplegia and left hemianopsia gradually developed. A diagnosis of tumour in the right temporo-sphenoidal lobe was verified by operation. In my patient, a man 62 years of age, the illness began with seizures in which he experienced a horrible odour which was attended with great dread and faintness or giddiness which obliged him to lie down, if he did not actually fall These attacks of *petit mal*, as I called them, disappeared under bromide, but there gradually developed first right hemianopsia and then right hemiplegia, the patient dying within a few months of the first symptom. There was no auditory phenomenon in my patient, who, moreover, displayed quite early in his illness a symptom not present in Dr Buzzard's case—i.e., word blindness—a difference clearly due to the fact that in his case the lesion was on the right, and in mine on the left, side of the brain. It was the presence of this word blindness *plus* the occurrence of attacks of *petit mal*, with such a definitely localising symptom as a special sense sensation, which made me from the first suspect the presence of tumour in the region of the left uncinate gyrus—a diagnosis which was confirmed by the subsequent progress of the case.

I am, Sirs, yours faithfully,

Wimpole-street, W., July 7th, 1906. HARRY CAMPBELL.

## OSSIFICATION OF THE FONTANELLES.

*To the Editors of* THE LANCET.

SIRS,—I have been induced by reading Mr. T. Leahy-Lynch's account of a case of ossification of the fontanelles and closure of the sutures of the skull at birth[1] to record two cases which I had previously thought of reporting.

In August, 1904, I was called to examine a female child, seven days old, because of the peculiar shape of the head. I found the fontanelles completely ossified and the sutures closed. The parietal bones were united at an angle of about 150°, forming a distinct ridge along the vertex. The mother was a primipara and said that she had had severe labour pains for 25 hours before the child was born There had presumably been dystocia due to the condition described, as at a subsequent confinement with as large a child the labour was a particularly easy one. The child throve in a tolerably satisfactory manner but at times appeared to be drowsy and irritable, when she would press her head against the mother. The latter thought the child suffered from headaches and I considered that she was probably right. The ridge has gradually become flattened and at present is hardly noticeable. Parentage: father, Dutch colonial, with probably a dash of coloured blood; mother, English colonial.

In October, 1904, I attended in her confinement at term a multipara. She was a woman with a roomy pelvis and on the os becoming fully dilated a male child was suddenly expelled with such force that he slipped through my hands. The head was small and of normal shape but the sutures and fontanelles were similarly closed. Within two days the child developed convulsions and subsequently vomiting and diarrhœa came on. These three symptoms continued at intervals until the child died when three weeks old. Parentage: father and mother both slightly coloured (Cape Dutch and Hottentot). In this connexion I might also record the case of a female child, aged five and a half months (father Norwegian, mother English colonial). On the third day of a very ordinary, almost afebrile, attack of diarrhœa she developed symptoms suggestive of cerebral compression and on examining the head I found the anterior fontanelle quite ossified. Death rapidly ensued and (although I do not profess that this is necessarily the correct scientific explanation) I attributed the phenomena to increase of the cerebro-spinal fluid, similar to the œdema one meets with in cases of infantile diarrhœa, the rigidity of the skull preventing any expansion.

I find no reference to complete ossification of the fontanelles at birth in Whitridge Williams's admirable work "Obstetrics." The cases recorded tend to show that congenital or premature ossification may prove also a factor in prognosis as regards the survival of the child.

I am, Sirs, yours faithfully,

GEORGE MARR, M.B., C.M. Aberd.

Knysna, Cape Colony, June 9th, 1906.

[1] THE LANCET, May 19th, 1906, p. 1387.

## SOUTH AFRICAN CIVIL SURGEONS.

*To the Editors of* THE LANCET.

SIRS,—Having received several inquiries concerning the South African Civil Surgeons' dinner we venture to ask for an opportunity of stating, through the medium of your columns, that no dinner will be held this year. It has been thought advisable in future not to hold the dinner annually as heretofore. The next dinner will be held in 1908 and in future the dinner will be held triennially. We hope that members will keep us informed of their addresses, as this will greatly facilitate communication in the future.

We are, Sirs, yours faithfully,

FRANCIS FREMANTLE
C. GORDON WATSON } Hon. secretaries.

44, Welbeck-street, W., July 5th, 1906.

## THE GERMAN PRACTITIONERS' ASSOCIATION.

(FROM OUR BERLIN CORRESPONDENT.)

THE German Practitioners' Association held its annual meeting this year at Halle, Professor LOEBKER of Bochum being in the chair. In his inaugural address the President alluded to the conflicts which had arisen between the sick clubs and the medical profession in certain towns. He said that the overwhelming power of the clubs made the coalition of the entire profession necessary and he was glad to be able to announce that in certain places—e.g., at Berlin—95 per cent. of the practising medical men, notwithstanding their differences in social, political, and other matters, had joined together in defence of their rights. The reform of the workmen's insurance law was in preparation and would soon be discussed in Parliament. Although workmen's insurance cannot be carried on without the collaboration of medical men, no representative of the medical profession had been invited by the Government to explain the wishes of the profession concerning the forthcoming Bill. The President further said that matters were very different in Austria, where the commission for the workmen's insurance law had included a number of medical men. Although the questions with which modern medicine had to deal in relation to problems involving public health and

other social matters necessitated knowledge which could only be supplied by experts, the Government had nevertheless refused to create professorships in "Social Medicine," and it is the merit of the Berlin branch of the Practitioners' Association to have opened, independently both of the Government and of the medical faculty, a seminary where both medical practitioners and medical students are instructed in the important matters with which "Social Medicine" deals. The President then pointed out that the lay public must be informed of the demands of the medical profession by the lay press and that for that purpose it was not unprofessional for a medical man to belong to the staff of a respectable lay journal. The President finally said that the profession in the struggles touching economical and social questions should never forget that their principal power was founded on medical science.

After the usual addresses of welcome of the representatives of the town, the university, and the other local authorities the meeting proceeded to discuss the forthcoming reform of the workmen's insurance laws. The sense of the meeting as expressed by different speakers was that the "free-choice" system should be made compulsory. It was further suggested that in the case of controversies between the clubs and the local profession impartial commissions, consisting of representatives both of the clubs and of the profession, under the presidency of a judge, should decide the matter, their verdict being final. Exception was taken to the fact that the law allowed people with a relatively large income to become members of the club and to enjoy all the benefits which were originally meant only for the indigent classes. The proposed amalgamation of the insurances against sickness, disablement, and accidents, which at present constitute three separate branches, was not considered to be in the interest of the medical profession. The meeting then adopted a motion that the reform of workmen's insurance must not be carried through without regard to the wishes of the medical profession. Other subjects discussed by the meeting concerned the so-called sick clubs for the middle classes not under the workmen's insurance laws. The association adopted a motion that it is unprofessional to act as a medical officer to these clubs at reduced fees. The third subject of discussion was the instruction of school children in hygiene. Professor HARTMANN, the chief medical officer of the Berlin municipal schools, read a paper on this question. He said that the propagation of hygienic knowledge was highly important and that this was best begun in childhood and by the school. The instruction in hygiene must be given by the medical officers of the schools in connexion with their regular visits. Also the school teachers should be directed to instruct the children whenever the occasion serves during a lesson; courses for the teachers should also be arranged. Another discussion dealt with locum-tenents and assistants. The Chemnitz branch proposed that medical students having passed the State examination should be allowed during a portion of the practical year required by the regulations to act as assistants to, or as locum-tenents of, medical practitioners instead of staying in a hospital. This motion was, however, rejected. In his closing address the President stated that the association had now 371 branches with 22,200 members and that 20,332 members were represented by 287 delegates at the present meeting.

## BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

### *The University.*

THE summer term has ended, the examinations are over, and at the Degree Convocation held on July 6th degrees were awarded in the midst of a brilliant assembly and much noise. It is difficult to understand why degree day should be looked upon as an occasion for the effervescence of animal spirits but so it has been and is. The Principal protested against the interruption but protest and argument will have little effect, except perhaps that of stimulation, and if the custom is to disappear it will die out gradually as it is doing in other places. If increase in the number of degrees awarded may be taken as an indication of the activity and prosperity of a university, then it will be granted that the University of Birmingham is in a very healthy state, for this year 83 degrees were awarded—that is 30 more than last year. After the degrees had been conferred a proposition was unanimously adopted offering the congratulations of all members of the University and its supporters to the Chancellor, the Right Hon. Joseph Chamberlain, M.P., on the seventieth anniversary of his birthday and tendering to him their thanks for the forethought and energy which he had exercised in accomplishing its foundation and for the care and advice which had guided its progress. In proposing the motion the Vice-Chancellor (Alderman C. G. Beale) made an excellent speech, reviewing in few words the main points of Mr. Chamberlain's work.

### *The New Maternity Home.*

On Saturday, July 14th, the foundation stone of the new Central Home of the Birmingham Lying-in Charity will be laid. That it is badly needed will be readily understood when it is stated that there is not at present any institution of the kind where seriously dangerous maternity cases can be received for treatment. The practical work of the charity has hitherto been done by six certificated midwives under the direction of a lady superintendent, an obviously inadequate staff for so serious a purpose in so large a city. The new home is in Loveday-street, close to the General Hospital and St. Mary's churchyard. It is to be built of bricks and silver-grey terracotta on the pavilion system. It will consist of three blocks, will be provided with an isolation ward, will have beds for 16 patients, and accommodation for medical officer, nurses, midwives, and pupils. The buildings will cost £12 500, towards which £7350 have already been received. A sum of £100 has also been promised conditionally on nine other donations of similar amount being collected and four of the nine have already been obtained. The building would have been erected at an earlier period but it was found that the site which was then available was not provided with sufficient light and air. Mr. Barrow Cadbury's generous gift of an additional piece of valuable ground not only disposed of this difficulty but it also enabled the governors of the charity to erect a better building with more extensive accommodation than was at first contemplated. In view of the importance and necessity of the work to be done it is to be hoped that the required funds will be soon obtained, not only for the new building but also for an increase of the general staff.

### *Boarding School for Feeble-minded Children.*

On June 16th I drew attention to the attempt which the Rev. H. N. Burden was making to establish a boarding school for feeble-minded children. Mr. Burden believes that if the feeble-minded children are removed from the dangerous and vicious surroundings of the city and are properly trained they can be made into harmless individuals and in some cases they can be enabled to contribute largely to their own support. He is prepared to find the capital necessary to equip and to staff a proper building for the purpose, but before doing so he is anxious to obtain guarantees from public bodies that they will send him a certain number of cases to be paid for at the rate of £24 per head per year, that sum to include the cost of clothing. All the adjacent local authorities have been communicated with and the first replies from West Bromwich and Walsall were disappointing. Now, however, the Birmingham education committee has had the matter under consideration and has wisely decided to contribute to the support of not more than 20 cases. Mrs. Hume Pinsent, who presented the report of the special schools subcommittee, quite rightly pointed out that the public conscience has been aroused in connexion with this social evil and it is more than probable that future legislation will make the proper care and control of the feeble-minded compulsory. In any case Mr. Burden's attempt to provide a solution of the question deserves cordial support. It is an experiment, but an experiment directed thoughtfully and with good intent and nothing but good can result from it.

### *The Housing Problem.*

By a vote of 30 to 16 the city council has approved the housing reform policy set out by the housing committee which stipulates that Birmingham should have statutory powers to plan undeveloped districts and to buy land without specifying the exact purpose for which it is purchased. This is a step in the right direction and it may now be considered probable that the parts of the city to be built will be arranged on some definite plan with regard to light and air space and that erectors of slum property will have to find some better occupation.

*The Annual Report of the Medical Officer of Health.*

Dr. J. Robertson's report on the health of the city during 1905 shows the lowest death-rate on record for Birmingham, 16·1 per 1000, a fall in the death-rates for zymotic diseases, typhoid fever, and pulmonary tuberculosis, and a reduction of the infantile mortality from 195 per 1000, at which it stood in the preceding year, to 155 per 1000 for 1905. It also notes a continued migration from the city to the suburbs and whilst this tends to vitiate the vital statistics of the city, still it must be held to be a healthy sign indicating higher ideals of comfort and surroundings. All this is very satisfactory but we must not forget to discount it by the fact that the climatic conditions of the year were remarkably healthy and by the further, and quite as important, fact that the birth-rate was only 29·2 per 1000, the lowest recorded for over 30 years. It is pleasant to note that medical men are loyally supporting the health committee's request for the notification of cases of pulmonary tuberculosis, for this is obviously an important preliminary step in association with the attack which must be made to keep that scourge in check. Dr. Robertson notes as a particularly important point in association with the public health the question of houses let as lodgings. Good sanitary provisions can be insisted upon in the cases of common lodging houses but the law is much less satisfactory as regards small houses which are taken and furnished by one person who lets off each room to a separate family, for the houses so let out are not in the least adapted to the purpose to which they are put, both water- and air-supply being often deficient. Clearly this is a subject which the housing committee might very well take in hand, for it is one which its proceedings with regard to the renovation of old property are likely to accentuate.

July 10th.

## LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

*University of Liverpool: Medical Faculty.*

The year 1905–06 has been one of marked increase in all the important divisions of the medical school of the University. The increase has taken place not only in post-graduate and research students, who have been steadily increasing in number from year to year, but also in the number of first-year students entering for the full curriculum. The number of first-year medical students who have entered for university degrees was 26, as against 13 in 1904–05 17 in 1903–04, 19 in 1902–03, and 11 in 1901–02. The number of undergraduate students in the school during the present year is 139, as against 121 in 1904–05. The number of medical students is 31, as against 24 in 1904–05, showing a very desirable increase in this division. The number of public health students is 11, as against four in 1904–05. The number of students in tropical medicine who have entered in the three terms of 1905–06 reached 36, as against 23 in 1904–05. The number of research students remains practically constant, being 25 in 1905–06, as against 27 in 1904–05. The total number of post-graduate and research students in 1905–06 reached 63, as against 53 in 1904–05. The grand total of students in the school amounted to 217 in 1905–06 as against 197 in 1904–05 The standard of answers in the under-graduate examinations for the year has been good and the average of passes were high. At the examinations for the diploma of tropical medicine in July, 1905, three candidates presented themselves, of whom one passed and two were rejected. An improvement took place at the December examinations, when seven passed out of eight, whilst all seven candidates were successful in March, 1906. The amount of research work done in the school was evidenced by the fact that nine theses were submitted for the degree of Doctor of Medicine during the year, upon work done in different departments. Additions have been made to the departmental library and also to students' text-books of reference in the general library. The important collection of books known as the Thompson-Yates and Johnston laboratories departmental library has been arranged and carefully catalogued under the supervision of Professor R. W. Boyce, F.R.S. Dr. J. L. Todd, assistant lecturer in tropical medicine, has been appointed director of the Runcorn Research Laboratory. Dr. Todd returned from an expedition to the Congo Free State in September, 1905, and has since been engaged upon research work at the Runcorn laboratory in conjunction with Dr. A. Breinl. Professor R. Ross, F.R.S., proceeded on May 20th to Greece in order to advise about malaria in that country, and returned on June 16th. During the year Professor F. T. Paul resigned the professorship of forensic medicine and toxicology, and in recognition of his distinguished services thereto has been appointed emeritus professor.

*The Royal Infirmary and the Clinical School.*

The Royal Infirmary has decided upon amalgamating with the United Hospitals Clinical School, so that one united clinical school will shortly take effect. Such an amalgamation is considered by the authorities of the University of Liverpool to make for the welfare of the medical school, and when it is accomplished Liverpool will be in the position of possessing one united school for clinical purposes, accessible to the student upon payment of one fee, thus affording the largest field for clinical work and clinical instruction in the United Kingdom. The advantages to the student of such an arrangement, especially in his fifth year of study after his clinical appointments have been completed, will be very great and the power of offering such advantages will undoubtedly give a great impetus to the Liverpool school. The medical board of the Royal Infirmary is to be congratulated upon having brought the negotiations to a successful issue, and in future it is to be hoped that a friendly rivalry between the constituents of one united clinical school may lead to development and progress in the matter of clinical teaching.

July 10th.

## WALES AND WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENTS.)

*The Inspection of Meat in Bristol.*

A REPORT which has recently been presented by the medical officer of health (Dr. D. S. Davies) to the health committee of the Bristol corporation, though satisfactory as regards the inspection of imported meat, has some disquieting features. There appear to be only two inspectors regularly employed for the inspection of meat. The city since the extension of its boundaries now covers 17,000 acres and has a population of 363,000 persons. There are 114 private slaughter-houses the inspection of which is practically left to one inspector, so that it is not surprising to learn that in Dr. Davies's estimation 100,000 carcasses escape inspection annually. In the same report Dr. Davies suggests that the newly appointed city bacteriologist should carry out an investigation for the purpose of ascertaining, among other things, whether there is evidence of certain organisms in canned meat from tins which are not blown but in which the meat is found to be non-sterile. The city council will be well advised to accept this last recommendation of the medical officer of health.

*Cardiff Infirmary.*

The finance committee of the Cardiff corporation has decided to recommend the city council to subscribe to the funds of the infirmary the sum of 200 guineas, an amount equal to that subscribed last year. The corporation is at present not represented on the board of management of the infirmary and it is suggested that there should be a representation of five members.

*The Medical Officer of Health of Pontardawe.*

Since the passing of the Public Health Act, 1872, there have been two medical officers of health for the rural district of Pontardawe, near Swansea. Mr. Griffith Griffiths has been medical officer of health for many years of the western district but failed a few months since to secure re-election, for the apparent reason that a cow which had been sold by him and which was re-sold more than once was ultimately condemned as unfit for food. Owing to the reluctance of the rural district council to re-elect him the Local Government Board suggested that opportunity should be taken to appoint a medical officer of health for the whole district. After prolonged discussion the district council has not accepted the proposal of the Board but has re-elected Mr. Griffiths. However desirable it may be that there should not be more than one medical officer of health in each sanitary district, it can hardly be desirable to take advantage of such circumstances as those narrated above to make the change, involving as it would have done a censure upon the displaced official.

*The Purification of the Avon at Bath.*

The sanitary committee of the Somerset county council is bestirring itself in connexion with the purification of the river Avon. The sewage from the city of Bath is discharged untreated into the river and correspondence has taken place between the county council and the city authorities, the latter body inquiring whether the county council proposes to take up the question of the purification of the river along the whole of its course in Somersetshire. The corporation of Bath has not been inactive in this matter. Some ten years ago land was purchased four or five miles distant from the city at a cost of £10,000 and plans for a comprehensive sewage disposal scheme were prepared. The estimated cost of the scheme is over £100,000. One reason why more progress has not been made with it is the necessity for providing extensive main sewers throughout the city, the cost of which would be additional to that named for the outfall works. The Somerset county council is to be commended for the action which it is taking. This action would, however, be much more likely to be successful if the council had the advantage of the advice of a sanitary officer. Having definitely refused upon more than one occasion to appoint a medical officer of health the county council will be placed at a distinct disadvantage when conducting negotiations with sanitary authorities who can be advised, as in Bath for example, by a medical officer of health of experience.

*The St. Columb Board of Guardians and its Public Vaccinators.*

The question of vaccination expenditure has been for some time engaging the attention of the St. Columb (Cornwall) board of guardians and some short time ago, as a means of reducing the expense, it was decided to inform the five public vaccinators of the union that their fees would be reduced to the minimum charges allowed by the Local Government Board. Previously the fees had been slightly higher than in the majority of the other Cornish unions. At the meeting of the guardians held on July 6th it was reported that four of the public vaccinators accepted the reduction but one "absolutely refused" to do so. The guardians determined to give him immediately a month's notice to terminate his contract and to advertise the appointment.

*District Medical Officers and the Supply of Medicines.*

The Local Government Board for some years has been in favour of the guardians supplying their district medical officers with drugs for their parish patients and this procedure has been adopted by some unions in the West of England; the Bristol board of guardians, amongst others, provides its district medical officer with an excellent selection of drugs. The Tetbury (Gloucestershire) board of guardians at its meeting held on July 4th read a letter from the Local Government Board suggesting that it should in the future provide medicines for the district medical officer, but the guardians, after a considerable discussion, decided not to comply with the recommendation.

July 10th.

## SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

*The Quatercentenary of George Buchanan.*

THE University of St. Andrews commemorated on the Friday and Saturday of last week the 400th birthday of its most distinguished alumnus and principal, George Buchanan, and was "at home" on the occasion not only to the sister seats of learning in Scotland but also to those of England, Ireland, the colonies, the United States of America, and the European continent. The success of the commemoration was complete, from the fine choral service in the University chapel to Lord Reay's masterly discourse on the hero of the hour; from the banquet in the hall of the Students' Union to the garden party in the University demesne. The cosmopolitan character of the proceedings was in keeping with the genius of the man commemorated, the representatives of literature, science, fine art, and political affairs in the old world and the new combining to attest their admiration for the "humanist" who—not a decade too soon—caught up all that was most vital in the bequest of classical antiquity and prepared the post-renaissance world for its absorption and assimilation. An "album," I believe, containing a full and officially revised report of the *oraisons de circonstance* will shortly be made public and will, I doubt not, prove a fitting memorial of one of Scotland's "forgotten worthies," whose fate it has been to receive more honour from the nations among whom he was a "stranger and a sojourner" than from that in which he was born and which rewarded his services with the scantiest of pittances in his life-time and with a pauper's funeral after his death.

*A Convalescent Home for the Royal Edinburgh Hospital for Sick Children.*

An appeal has been circulated by the directors of this hospital for a sum of £20,000 to enable them to establish a convalescent home in connexion with the hospital. The majority of children's hospitals have such homes in connexion with them and there can be no question as to the desirability of having them. By the beneficence of a lady a house at Muirfield, Gullane, has been bequeathed to the hospital and as the locality is most suitable the object of the directors is to alter and to enlarge the present building. The existing house is being used meanwhile for a few children, but the accommodation is very limited in view of the needs of the hospital. The scheme is deserving of support and it is hoped the directors will not appeal in vain to the philanthropic and the charitable who have money to bestow on such worthy objects.

*The late Mr. Thomas Gilbert of the University of Edinburgh.*

At the time of Mr. Gilbert's death reference was made in THE LANCET to the honourable position which he had held in the University. The Senatus Academicus at its last meeting put on record a long minute indicating its sense of its loss and that his "long and faithful services in divers capacities are worthy of most grateful commemoration." The minute concludes by stating that "all who have been brought into official contact with Mr. Gilbert have ever gratefully recognised his unfailing courtesy and his readiness to give them the benefit of his ripe experience. By many members of Senatus who knew him in his private capacity also his simplicity and uprightness of character, his genial kindliness and humour, and his rare musical talent will long be remembered, and his loss will be mourned as that of a highly esteemed friend."

*Notification of Measles and Pulmonary Tuberculosis in Edinburgh.*

At a recent meeting of the public health committee of the Edinburgh town council it was decided by the casting vote of the chairman that it was desirable to have the first case of measles occurring in a family notified. It is some years now since the compulsory notification of measles was given up, partly on account of the expense. A further motion by Councillor Robertson, a medical member of the committee, as to whether the time had not come for the compulsory notification of pulmonary tuberculosis was referred to a subcommittee for report. It may be mentioned that the Midlothian county council has also had the notification of pulmonary tuberculosis before it quite recently and that it decided to do nothing in the meantime in view of the possibility of concerted action being taken. The matter seems to be somewhat maturing in this locality.

*British University Students' Congress.*

This Congress is to be held in Edinburgh, beginning on July 13th and going on to the 17th. On the evening of the 13th there is to be a dance in the University union. There is a varied programme of business, sight-seeing, and festivities.

*Women Graduates and the University Franchise.*

As was intimated in THE LANCET at the time the women graduates of the Universities of Edinburgh and St. Andrews took legal steps to have it decided whether they were entitled to vote at the election of the Member of Parliament for these Universities. The case has been before Lord Salvesen in the Court of Session and he has decided against the women graduates. No other decision was looked for and it may be hoped that the latter will not continue to throw away money in further testing the question in the law courts.

*The Edinburgh City Hospital during 1905.*

In the annual report of the medical officer of health the section dealing with the City Hospital contains a number of facts of much interest. This portion of the report is by Dr. Claude B. Ker, medical superintendent of

the hospital. During the year 2629 cases were admitted to the hospital. Of 230 individuals, including nurses and maids, exposed to infection only 11 nurses and three maids contracted the infectious diseases with which their duties brought them in contact. Taking some of the diseases dealt with reference may first be made to diphtheria; of this disease or suspected of having the disease there were 581 cases. In regard to the number it is remarked that cases are notified which ten years ago would not have been considered diphtheria. This is the result of bacteriological examination and the report thinks that the mere presence of diphtheria bacilli in the throat most doubtfully justifies a diagnosis of diphtheria. Of the 581 it was considered that 93 could not be said to be suffering from diphtheria. Of the 488 cases the mortality was slightly below 8 per cent. but the type throughout the year was mild. Post-diphtheritic paralysis only occurred in 42 cases—that is, 8·4 per cent. Of 67 cases in which the larynx was affected 15 died. Of 44 cases in which the nose was affected 15 died. The laryngeal cases were more severe than usual; of the 67 cases 34 required operation. The method of operation preferred is intubation followed by "secondary" tracheotomy if necessary. Of the 34 operated on 22 recovered and 12 died. With regard to antitoxin treatment, as a rule one dose was sufficient, but in severe cases doses of 8000 units were repeated two or three times. As regards the time of injection, of 20 cases injected the first day none died; of 141 injected within 48 hours 6, or 4·25 per cent., died; of 238 injected in the second 48 hours 20, or 8·42 per cent, died; and of 109 injected on or after the fifth day 13, or 11·92 per cent., died. Of the total 111 suffered from antitoxin rashes. Of 735 cases of measles 37, or 5·03 per cent., died and broncho-pneumonia was the main cause of death. Of 172 cases of whooping-cough 16, or 9·3 per cent., died; broncho-pneumonia following whooping-cough is treated in the open air. Of 740 cases of scarlet fever only 13, or 1·7 per cent., died. As regards complications 6·35 per cent. had nephritis, 11·50 per cent. otorrhœa, 11·50 per cent. rhinitis, 17·59 per cent. adenitis, and 4·46 per cent. arthritis.

*The Preservation of Infant Life.*

The Local Government Board of Scotland has just issued a circular to the clerks to local authorities suggesting that those authorities should make arrangements whereby public health departments, health visitors, district nurses, dispensaries, infants' milk depôts, and other organisations directly concerned with the problem of infantile mortality should be enabled to distribute a leaflet on the management of young children. The leaflet specially recommended by the Board for this purpose is entitled "Hints about the Management of Children," by the late Dr. James Burn Russell, for some time medical member of the Board and previously medical officer of health of Glasgow. The leaflet was prepared by him for the local authority of Glasgow and has been distributed by the registrars there for many years.

*Epidemic Cerebro-spinal Meningitis in Glasgow.*[1]

Dr. A. K. Chalmers, the medical officer of health of Glasgow, states that since his memorandum of three weeks ago 13 other cases suspected of suffering from cerebro-spinal fever have been reported in Glasgow. Out of these cases in four instances at least the specific micro-organism of the disease was obtained. In one case the patient was aged three weeks, another was seven months old, four were under five years, five were under ten, one was under 15, and one was under 25. One of the cases, a baby seven months old, well illustrates the malignity with which the disease may occur, 12 hours only elapsing between invasion and death. Further evidence of the distribution of the disease is being afforded by the occurrence of two cases in Ayrshire; one of the patients, however, resided in Lanarkshire and is in business in Glasgow.

*Ayrshire Sanatorium for Consumptives.*

This sanatorium, erected on the banks of Afton water, was opened last week by the Countess of Eglinton. The movement for the building of a sanatorium for Ayrshire had its inception at a meeting of the directors of the Ayr County Hospital seven years ago. The directors saw that it was impossible to combat consumption with the means at their disposal in existing hospitals and, along with the directors of the Kilmarnock Infirmary, they convened a public meeting at which the preliminary steps were taken to erect this sanatorium. They had no difficulty in raising the money and the whole cost will be under the estimated sum of £10,000. The expenditure includes the purchase of 55 acres of ground, gas and water works, drainage, roads, paths, and fencing, as well as the buildings and furnishings. The accommodation is at present limited to 14 beds, but it is the purpose of the directors to increase this when it seems advisable. The site appears to fulfil every required condition. It has 800 feet of elevation with pure mountain air; it is not too near a town; it has good soil, a good water-supply, and plenty of walks at different gradients.

July 10th.

[1] See THE LANCET, June 30th, 1906, pp. 1815 and 1861, and July 7th, p. 47.

## IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

*Royal Hospital for Incurables, Dublin.*

THE annual meeting of the supporters of the Royal Hospital for Incurables, Donnybrook, Dublin, was held in the institution on July 5th, Mr. William Fry, chairman of the managing committee, presiding. There was a large attendance, which included the President of the Royal College of Physicians, Sir William J. Smyly, and Mr. H. R. Swanzy, President of the Royal College of Surgeons. The chairman said that the institution was founded so far back as 1743 and that it was non political and non sectarian. It contained 213 beds and at the present time held 211 patients, while it proved impossible to accommodate anything like the number of applicants for admission. At the last election there were only four beds vacant and 28 candidates.

*Testimonial to the Rev. W. Delany.*

On June 30th a meeting was held at the Shelbourne Hotel to inaugurate a scheme for commemorating the services to education of the Very Rev. William Delany, President of University College, Dublin, who had just attained the dignity of his golden jubilee. The Right Hon. C. Palles, LL.D., Lord Chief Baron of the Exchequer, presided and it was decided that the most suitable memorial would be an exhibition in University College, open to students of intermediate Jesuit colleges in Ireland.

*Death of Dr. M. A. MacDonnell.*

The lamented death of Dr. Mark Antony MacDonnell, who was formerly well known in Ireland, took place on July 9th at his residence, 14, Ridgeway place, Wimbledon. Dr. MacDonnell was formerly Member of Parliament for Queen's County, where he was elected as a Nationalist in 1892 and re-elected in 1895 and 1900. He graduated at Queen's College, Galway, in 1876, taking the degrees of M.D., M.Ch., and L.M., and subsequently practised in Liverpool where he was surgeon to the Liverpool Cancer and Skin Hospital and consulting officer to Toxteth Infirmary. He was born in 1854 and was a son of the late Mr. Mark Garvey MacDonnell and brother to the Right Hon. Sir Antony Patrick MacDonnell.

*Overcrowding in Belfast Schools.*

At a meeting of the Belfast board of guardians held on July 3rd the Local Government Board reported that its lady inspector, Mrs. Dickie, draws attention in her report to the fact that the condition as regards cleanliness and ventilation of the primary (National) schools is for the most part very unsatisfactory. The floors, she says, are seldom washed, the accommodation is frequently inefficient, and the arrangements for ventilation are generally defective. The boarding-out committee, in conveying the report to the Belfast guardians, states that it is in perfect agreement with the inspector's report as to the want of cleanliness, want of ventilation, and the overcrowding in almost all cases. It recommends that the extract in reference to the schools from the inspector's report should be given to the press and it advises that a representation should be made to the Board of Education re the dirty, insanitary, and over crowded condition of the great majority of the schools in Belfast.

*Portadown and Banbridge Water supply.*

The new water-supply for Banbridge and Portadown, which comes from the Shimna river in the Mourne mountains, was turned on to supply these towns on July 5th. The works are estimated to cost about £70,000.

*The Belfast Mater Infirmorum Hospital.*

The Saturday collection on June 30th for the Mater Infirmorum Hospital, Belfast, amounted to the sum of £1025 15*s.* 7*d.*, which includes the district collections and £78 7*s.* 5*d.* handed in at the hospital.

*The Medical Officer of Health of Belfast.*

The Local Government Board (with which the veto rests) has written the Belfast City Council to the effect that it will approve of a salary of £800 or more per annum for the new medical officer of health of Belfast but that it cannot agree to a smaller amount. The council had proposed £600.

July 10th.

## PARIS.

(FROM OUR OWN CORRESPONDENT.)

*Etiology, Pathology, and Treatment of Aneurysms of the Great Vessels.*

AT a meeting of the Academy of Medicine held on June 26th M. Lancereaux read a paper on the etiology, pathology, and treatment of aneurysms of the great vessels. He said that such aneurysms, especially when affecting the aorta, were the usual effects of the action of the various microbes of three important diseases—namely, tuberculosis, syphilis, and malaria. In certain cases the organisms on which these diseases depended made their way into the outer coat of the arteries and brought about the formation of new elements of connective tissue; these caused thickening and sometimes penetrated in the form of cellular processes into the middle coat which they perforated. This diminished the resistance of the arterial wall, which, under the influence of the blood pressure, at last gave way, the result being either hæmorrhage or the formation of an aneurysmal sac. In these circumstances prophylactic treatment consisted in preventing the deterioration of the vessels. For this purpose mercurial preparations and iodides were indicated in cases of a syphilitic nature and in aortic scleroses of malarial origin, at least in the incipient stage. When an aneurysm had formed, the usual, and in fact the only satisfactory, treatment was the application of a ligature. This method, however, was dangerous when the artery was large and in the case of the aorta it was impossible, but in these circumstances attempts might be made to induce the coagulation of blood within the aneurysmal sac by the injection of gelatinised serum. The success obtained in this way by M. Paulesco and himself in a large number of cases left no room for doubt as to the efficacy of the method; with respect to its alleged dangers M. Lancereaux had no hesitation in saying that they were non-existent, provided that the fluids employed were perfectly sterilised, and this was proved by the fact that in nearly 1200 injections of gelatinised serum he has never had the slightest mishap.

*Adhesive Pericolitis.*

At a meeting of the Surgical Society held on June 27th M. Sieur read a paper on adhesive pericolitis occurring in a young soldier who had for several years suffered from pain in the right hypochondrium and severe constipation. Eventually he was suddenly seized with symptoms of intestinal obstruction. From the copious vomiting of bilious fluid, the flattening of the abdomen, the pain on pressure, and the dulness on percussion in the left hypochondrium it was inferred that the obstruction was situated in the last portion of the duodenum and laparotomy showed that the diagnosis was correct, for the duodeno jejunal angle was firmly compressed by pericolic inflammatory adhesions which seemed to envelop also the stomach and the liver. M. Sieur broke down the adhesions as carefully as possible and closed the abdomen after inserting a drainage-tube, as there was a prospect of perforation of the duodenum, its walls being in an unhealthy condition and apparently very friable. The further progress of the case justified this course, for several successive perforations of the duodenum occurred during the next few days and the patient died on the eighth day. The necropsy showed the existence of pericolic adhesions extending from the hepatic flexure of the large intestine and partially enveloping the liver, the stomach, and the spleen. The biliary passages were normal. On the other hand, the mucous lining of the large intestine was inflamed and in several places it was ulcerated. In the last portion of the duodenum there were five perforations. M Sieux was of opinion that the condition was adhesive peritonitis following chronic enteritis and causing obstruction by compression of the bowel at the junction of the duodenum and jejunum.

*Mistletoe in the Treatment of Hæmoptysis.*

At a recent meeting of the Therapeutical Society M. W. René Gaultier read a paper on the use of mistletoe as a remedy in hæmoptysis. Two cases of hæmoptysis had to his knowledge been successfully treated by the mistletoe of the oak given on the advice of a woman not possessed of any medical training and some foreign medical men had employed it long ago for the same purpose. M. Gaultier therefore tried an ethereal extract of mistletoe made into pills and given to eight patients suffering from tuberculous hæmoptysis, the dose being eight decigrammes daily. In seven of these patients the hæmoptysis was soon checked. The remaining patient derived no benefit, but in this case it was found after death that the hæmorrhage proceeded from a dilated vessel (aneurysm of Rasmussen) and was therefore not amenable to treatment. Under the influence of the ethereal extract of mistletoe the patients showed an obvious fall in the arterial blood pressure and an acceleration of the pulse, and M. Gaultier observed similar phenomena in animals to which he had given intravenous injections of a decoction of mistletoe in water. The utility of the plant in hæmoptysis appeared to be connected with its power of reducing the arterial blood pressure.

*The Berck Hospital.*

The budget of the Admini-tration of the Assistance Publique for 1906 includes the sum of 300,000 francs to meet the expenses connected with the enlargement of the hospital at Berck. The sum is provided out of the profits of the *pari mutuel*.

July 10th.

## VIENNA.

(FROM OUR OWN CORRESPONDENT.)

*The Medical Profession and the Telephone.*

THE general use of the telephone has resulted in some unpleasant conflicts between patients and their medical advisers, as some of the former fail to understand that treatment "at a distance" is not within the power of a medical man. On the other hand, many patients find the telephone very convenient as a means of obtaining medical advice from a practitioner without having to pay his usual fee. In order to put an end to doubts as to the lawfulness or otherwise of charging for a "telephone consultation" when the circumstances made such a consultation possible—as, for instance, after an operation or before a patient's departure for a health resort—a case was brought into court where a patient, who had several times, even at night-time, asked his medical man for professional advice, refused to pay such fees. The judge decided that the advice must be paid for, whether it was given in the consulting room, or by letter, or by telephone, or at the bedside. The special knowledge of the practitioner, acquired with difficulty after long years of study, could never be a subject of "sweating"; it was the practitioner's duty to decide whether the case was such that he might safely give his further instructions by telephone after having seen the patient personally on a previous occasion. It is the intention of the branch divisions of the medical councils to require their members to charge for such consultations.

*Angioneurotic Dermatitis in Hysterical Patients.*

At a recent meeting of the Clinical Society Dr. Nobl showed two girls, aged 23 years, who presented some interesting phenomena on the skin of the thorax and the flexor surfaces of the extremities; one of them also had similar appearances on the abdomen. At the time of the demonstration only numbers of dark pigmented small scars were visible interrupted by bands of normal skin and by stripes of hard, elevated horny matter resembling keloid. When the patients were taken to the hospital (by a curious coincidence both went on the same day) the affected area was covered by numerous small vesicles which within 24 hours lost the epithelium and appeared partly as greyish-green scabs and partly as ulcers with a fibrinous superficial layer on them. They were diagnosed as zoster hystericus

gangrænosus, and a careful examination revealed the presence of other markedly hysterical stigmata, such as hemianæsthesia of the right half of the body, a diminution of the field of vision on the temporal side, and pressure points on the mammæ and abdomen. As there was a suspicion that the vesicular eruption might have been produced by artificial irritation, such as the use of chemicals, the thorax and the limbs were enveloped for five weeks in bandages of plaster-of-Paris and gelatin, which were renewed every four days. But beneath the bandages and while the patients were under close observation there appeared new vesicles which ran the same course and finally changed into gangrenous ulcers, so that the diagnosis was confirmed. One of the patients showed no after-effects but scars, whilst in the other girl long narrow bands of hypertrophied connective tissue running in the direction of the thoracic and intercostal nerves were beginning to develop in the place of the scars. The interest of these cases lies in the fact that the disease has been proved to be of endogenous origin. Several other observers have met with similar cases of obstinate dermatological irritation, mostly in females, but they were found to be due to the surreptitious use of caustics or sulphuric acid self-applied by hysterical subjects. The ingenuity of these patients has often baffled the most elaborate precautions of the medical men and the discovery that the lesions were self-inflicted was only made by maintaining the closest observation both night and day.

*The Treatment of Tetanus.*

In a lecture delivered before an invited society at the Franz Joseph Hospital in Vienna Dr. Lotheissen explained the method of treatment of tetanus and the prophylactic measures worked out by him recently. He employs the serum prepared at Hoechst in Germany, which is twice or three times as strong as the French preparation, and he injects at least 100 antitoxin units. As regards the nature of the wounds which give rise to suspicion Dr. Lotheissen puts first in order the so-called "street wounds," mostly resulting from collision with cars or other vehicles, falls from horses, or motor-car accidents; these wounds have been in contact with street dirt or mud; they are extensive and the tissues are bruised. Another item of importance is the depth of the wounds, because an injury inflicted by a long object, such as a piece of wood, may become infected, and in a deep wound exclusion of air is possible with consequent favourable conditions for the anaerobic micro-organism. The quantity and virulence of the dangerous material which has been introduced are unknown, so that large doses of the serum are required even in prophylactic injections. As the serum is slowly but continuously excreted by the organism a repetition of the injection is desirable. Dr. Lotheissen generally gives a second dose after one week if suppuration and fever continue. Acting on this plan he has during the last year seen only 12 cases of tetanus, all of which had also received prophylactic injections, whereas in former years the cases numbered 47, 71, 35, and 58. The onset of the tetanus in the last-named 12 cases is no doubt due either to the injections having been given too late or to the serum being too weak. At any rate, the attacks were decidedly milder than in former years, consisting merely of some spasmodic attacks of the masseter muscles and of the intercostal and abdominal muscles. In one case a scarlatiniform rash was visible for three days but no albuminuria or swellings of the joints was noted. One case ended fatally; the patient was a man whose left arm had been smashed by the discharge of a gun and he was not taken to the hospital until a fortnight after the accident, when the virus had no doubt already taken a firm hold on the nervous tissues.

*The Value of the Abdominal Route in Operations for Uterine Cancer.*

At a recent meeting of the Gynæcological Society the respective values of the vaginal and the abdominal operation in cases of uterine cancer were compared and the majority of surgeons with an extensive experience on the subject expressed themselves in favour of the abdominal route. An interesting formula for the exact valuation was produced by Dr. Waldstein who declared that there is only one way to find out what the prognosis of the disease is. Professor Wertheim and Professor Schauta, who act both on the same lines, operate upon 50 per cent. of the women presenting themselves with uterine mischief and both clinics have 60 per cent. of relative recoveries or at least of freedom from relapse for more than five years. The mortality, which was formerly 16 per cent., has been reduced to 9 per cent. by shortening the duration of the anæsthesia. All preparations are made on the patient in the stage of incipient narcosis, whilst the actual anæsthesia is reserved only for the operation *sensu strictiori*. Oxygen is administered every now and then. Taking all data into consideration, the percentage of absolute recovery is only 11, which means that of every 100 women suffering from uterine cancer only 11 may (with present methods) be alive after five years without recurrence of the disease, whilst the remaining 89 die from the disease or from the operation or have to undergo further operations. The patients have been under observation for the last eight years. The plan adopted has for its object the eradication of the neoplasm and all deposits in the body by extirpation of all lymphatics connected with the primary and secondary nodules.

*The Enamelling of Household Utensils.*

The Ministry of the Interior has published some new regulations concerning the enamelling of articles coming in contact with food for human use. No measures for solid or liquid food and no table utensils may be coated with an enamel containing antimony or zinc. If this admixture be present in any such article all material at the factory where it was made is liable to be seized and destroyed. A similar regulation applies also to toys and to wrappers or boxes for tea, coffee, and tobacco.

July 9th.

## NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

*The Exposure of the Beef-packing Frauds.*

THE public papers are acknowledging the fact that THE LANCET made the first exposure of the disgusting practices of the great Beef Trusts of Chicago through the investigations of its Special Commissioner. A leading paper quotes from the articles in THE LANCET of Jan. 7th and 14th, 1905, the most unqualified condemnation of the beef-packers' methods and remarks that these published facts of a year ago prove that the "Beef Trust has had its warnings again and again and has deliberately closed its ears to them." It adds: "There has been time since THE LANCET'S disclosure to replace the whole outfit of abominations at Chicago with abattoirs, but instead of profiting by the warning the Trust sneered at the disclosures and said that THE LANCET'S man was behind the times." It is admitted that the exposure by THE LANCET led to the recent investigations by separate individuals and finally to the inspections ordered by the President. The reform which will be forced by this exposure, both by public opinion and legislation, will be of world-wide importance.

*Tuberculosis a Cause of Divorce.*

The Superior Court of California has granted an application for divorce on the ground of pulmonary tuberculosis. A wife applied for divorce and in her application alleged that before the marriage was contracted she asked her prospective husband if he was perfectly sound and healthy and received every assurance that he was free from disease. Subsequently, after the marriage was consummated, it was proven that he was suffering from tuberculosis and the court held that the existence of this disease was sufficient to warrant the annulment of the marriage.

*Regulation of the Use of Opium in the Philippines.*

An Act of Congress provides that after March 1st, 1908, it shall be unlawful to import opium into the Philippines in whatever form, except by the Government, and for medicinal purposes only, and that at no time shall it be lawful to sell opium to any native of the Philippine Islands except for medicinal purposes. To regulate the traffic in opium until 1908 the Philippine Commission has passed a stringent law of which the following are some of the more important provisions: only Chinese long addicted to the use of the drug are permitted to use opium in any of its forms, and they must make formal application, and then the drug can be used only in the residence of the user; it can be sold and delivered only to licensed physicians, pharmacists, and dealers; physicians may prescribe opium as a medicine, but any physician who prescribes it for patients whose physical

condition does not require it shall have his licence to practise medicine revoked and shall be punished by a fine of not less than $125 nor more than $500, or by imprisonment for not less than six months nor more than one year. Licensed pharmacists and dealers are placed under the most rigid restrictions in the sale of opium.

*Fatalities in Athletic Games.*

With the opening season comes the annual discussion of the fatalities and proprieties of athletic games. One of the most trustworthy collections of statistics of these fatalities for the year 1905 was recently presented to the Norwegian Hospital Alumni Association. From this paper it appears that the whole number of deaths collected was 128, of which 50 were due to diseases and 78 to accidents of different kinds. Of the accidental deaths football was the game mentioned in 28 cases; baseball in 12; horse-racing in nine; boxing in six; gymnasium feats in three; and auto-driving in two; the other fatalities were equally divided between golf, hammer-throwing, bicycle coasting, hand ball, polo playing, and wrestling. Of the accidental deaths the average age was 20 years. The causes of death in football were: abdominal injuries, seven; dislocation of the spine with paralysis, three; concussion of the brain, five; fracture of the skull, five; cerebral hæmorrhage, two; fracture of a rib with wound of the heart by spicula, two; and fracture of the spine, one. The causes of death in baseball were: blow over the cardiac area, five; head injuries, four; blow over the abdomen, one; and heart failure while running, one. Fractures of the skull were the cause of death in nine jockeys. In regard to the current opinion that athletics impair the heart Dr. Anderson, of Yale University, states that there have been 51 deaths of Yale athletes out of a total of 761, with heart disease as a cause in but two cases. Dr. Nicols and Dr. Smith, physicians to the football squad of Harvard University during the last football season, extending from Sept. 14th to Nov. 25th, 1905, report the list of injuries of every kind and grade as 145. They conclude that the number, severity, and permanence of the injuries received in playing football are very much greater than is generally credited; that the injuries are unavoidable, for as many are received in practice as in competition; that the proportion of injuries is incomparably greater in football than in any other of the major sports; that the game does not develop the best type of men physically; and that the percentage on injury is much too great for any mere sport.

*Rockefeller Institute Scholarships.*

The Rockefeller Institute for Medical Research has offered scholarships to assist investigations in experimental pathology, bacteriology, medical zoology, physiology and pharmacology, and physiologic and pathologic chemistry to be carried on in the laboratories of the Institute in New York City. The value of these scholarships ranges from $600 to $1000. They are open to men and women who are properly qualified to undertake research work in any of these departments and who will devote their entire time to study. The term of service begins preferably on Oct. 1st, but by special arrangement may begin at another time.

*The Condition of the Air of the Subways.*

The public complaints of the foulness of the air of the subways has led to an investigation with the following results. Chemical analysis of the dust showed that it contained 61·30 per cent. of iron, nearly all of which was in a metallic state; there was 21·94 per cent. of organic matter, consisting of particles of animal and vegetable origin; 15·58 per cent. of silica and other matters insoluble in acid; and 1·18 per cent. of oil. The average of a considerable number of determinations of the weight of dust suspended in the air was 61·6 milligrammes per 1000 cubic feet of air. The origin of the subway dust is attributed in part to the street from which it is drawn by suction, in part to the wear and tear of materials of construction, but a considerable amount is pulverised metal, ground up by the operations of the trains. The cause of the most prominent odours has been the lubricating oil used on the trains, the broken stone ballast of the roadbed, and worthless proprietary disinfectants used in the toilets. The railroad companies are engaged in introducing means of relieving the subways of the offensive and unhealthy atmosphere which now render them objectionable as routes of travel.

June 24th.

# Obituary.

## JOHN WINTER DRYLAND, M.R.C.S. ENG., L.S.A. LOND., J.P.

BY the death of John Winter Dryland, which occurred on June 24th, unexpectedly at the last although he had been in failing health for some time, Kettering has to mourn the loss of a well-known and beloved medical practitioner and of a citizen to whom the welfare of the town wherein he had spent his life's work was always a matter of special interest. Mr. Dryland was born at Newbury, Berkshire, in 1833, and was educated at Totteridge School and at Paris. He received his medical education partly at Brighton and partly at Guy's Hospital. He qualified in 1855 and soon afterwards was appointed resident surgeon to the Reading Dispensary. Some two years later he resigned this post and went to Kettering as assistant to the late Mr. Wyman. Within a few months Mr. Wyman died and in 1858 Mr. Dryland purchased the practice and the house. In addition to having a large private practice Mr. Dryland held a number of public appointments. In 1859 he was appointed medical officer to the Kettering union, a post which he continued to hold till within a few months of his death. He was also medical officer to the union infirmary, a public vaccinator, and medical officer of health of Kettering. It was upon his advice that some years ago the Kettering board of guardians erected spacious buildings on land at the rear of the workhouse for use as a hospital for cases of tuberculosis and as a general infirmary. Since his appointment as medical officer of health in 1872 the sanitary conditions of Kettering have been greatly improved and he was, in addition, president of the local district nursing association and a member of the honorary staff of the General Hospital. It was mainly owing to his advocacy that the building of the isolation hospital was due. In 1903 he was placed upon the commission of the peace for the county of Northampton.

Besides the work connected with all the above-mentioned offices Mr. Dryland took a deep interest in ambulance work and was never tired of instructing the railway men of Kettering in this subject, while it was he who delivered the first ambulance lecture ever given in Northamptonshire to a class held in connexion with the Kettering Church Institute. Just before his death he was created an honorary associate of the Order of St. John of Jerusalem. As regards his private practice he, like many another general practitioner, often had to undertake urgency operations of no light character in circumstances which were by no means favourable to good results and with no other assistance but a layman, but in 48 years of practice he only lost two patients after amputations.

Mr. Dryland was a Conservative and Churchman, and on June 27th his body was conveyed to the parish church where a short office was said. On the morning of June 28th the Holy Communion was said, and later in the day the interment took place in Kettering cemetery. The first part of the burial office was sung in the church, the congregation, besides the members of the family, including representatives of all the public bodies of the town. After the lesson the body was carried in procession to the cemetery where it was received by the rector of Kettering and other clergy. Mr. Dryland was twice married. He has left three daughters and two sons, one of whom, Mr. Leslie Winter Dryland, is in the medical profession.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.—The deaths of the following eminent foreign medical men are announced:—Dr. Barthélemy, physician to the St. Lazare Hospital, Paris.—Dr. Josias, physician to the Paris hospitals.—Dr. Charles W. Allen, professor of dermatology in the New York Post-Graduate School and Hospital.—Dr. Hirschberg, a well-known German authority on medical statistics.—Dr. Maurice Coste, formerly physician to the Marseilles hospitals.—Dr. Giulio Obici, *privat-docent* of mental diseases in the University of Padua.—Dr. Fritz Schaudinn of the Hamburg Institute of Tropical Medicine, at the age of 35 years. He was the first to recognise the existence of spirochæta pallida in the plasma and secretions of syphilitic patients. Some years

ago, in conjunction with Dr. E. von Leyden, he discovered a new protozoon, Leydenia gemmipara, in the ascitic fluid of a case of cancer.—Dr. Friedrich Hegelmaier, emeritus professor of botany in the University of Tübingen, at the age of 72 years.—Dr. Ludwig Ebner, extraordinary professor of surgery in the University of Gratz, after an operation on the throat.

## THE ROYAL VISIT TO NEWCASTLE.

His Majesty the King, accompanied by the Queen, arrived at Newcastle on Wednesday last to inaugurate the formal opening of the new buildings of the Armstrong College and the Royal Infirmary. The weather was unfortunately very bad but despite this drawback enormous crowds were assembled to welcome their Majesties and the utmost enthusiasm prevailed.

Their Majesties were met at the Central Station by the Mayor, Mr. J. B. Ellis (now Sir Joseph Baxter Ellis and Lord Mayor), the Duke of Northumberland, Lord Lieutenant of the County, Sir Mark Palmer, chairman of the Newcastle Chamber of Commerce, and other influential citizens, and after receiving addresses and bouquets drove to the Armstrong College, where they were received by Sir Isambard Owen, the Principal, Dean Kitchin, the Warden, and Mr. W. H. Knowles, the architect, who were supported by an influential array of north country notables. After the presentation of many interested in the College His Majesty declared the new buildings open in a short but eloquent speech, testifying to his admiration of the structure and his belief that the admirable facilities afforded for acquiring knowledge would give the inhabitants of Newcastle special opportunities of providing their children with valuable intellectual training. The College professors and students having presented addresses, the Queen accepted a casket made on the premises and, with the King, witnessed several interesting experiments in Professor Thornton's electrical laboratory.

By the time their Majesties reached the scene of the second great function of the day the weather had much improved. Their Majesties were received at the entrance of the infirmary by Lord Armstrong, chairman of the house committee; Sir George Hare Philipson, Sir Riley Lord, the principal members of the hospital staff, and the joint architects, Mr. W. L. Newcombe and Mr. Percy Adams. Lord Armstrong having read an address in which he stated briefly the history of the foundation and re-foundation of the infirmary,[1] the King, in a reply of real eloquence, testified his sincere gratification at seeing the completion of the magnificent structure henceforth to be known as the Royal Victoria Infirmary. He alluded to the grand generosity of the large donors who had contributed to the fund as well as to the substantial pecuniary support supplied by the workers of the city, and expressed his pleasure in agreeing to the suggestion that two of the wards should be named "Edward VII. Ward" and "Queen Alexandra Ward" respectively. The Bishop of Durham having offered up prayer, the King declared the Royal Victoria Infirmary open. Many presentations were made, among those thus honoured being the Members for the borough, Mr. W. Hudson and Mr. Thomas Cairns, and Mr. G. J. Frampton, R.A., the sculptor of the statue of Queen Victoria which stands in front of the new infirmary.

His Majesty then conferred the honour of knighthood upon the Lord Mayor, who has three times served as mayor of the city. The departing drive of their Majesties to the railway station was the occasion of enthusiastic public expressions of loyalty.

[1] We tell this interesting story in a leading article this week, p. 100.

PRESENTATION TO A MEDICAL PRACTITIONER.—The members of the Harrogate (Yorks) branch of the St. John Ambulance Association recently presented Mr. E. Carnell, M.R.C.S. Eng., L.R.C.P. Irel., D.P.H. R.C.P.S. Irel., with a silver and ivory paper-knife as a mark of appreciation of his services as honorary lecturer.

# Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—The following gentlemen passed the second examination in anatomy and physiology held recently:—

Edward Bruce Allnutt, St. Bartholomew's Hospital; Manekjee Dhanjishaw Anklesaria, L.M. & S., Bombay; Tom Chamney Russell Archer, St. Thomas's Hospital; John Lee Atkinson, Guy's Hospital; Charles William Tresidder Baldwin, Charing Cross Hospital; Jehangir Cowasjee Balsara, L.M. & S., L.R.C.P. & S. Edin., Bombay; Ernest Cuthbert Barnett, New Zealand; Donald Maxwell Cox, Charing Cross Hospital; Ernest Edgar Davies, University College, Bristol; Archibald Wallace Duncan, St. Mary's Hospital; Evan Richard Evans, St. Bartholomew's Hospital; Walter Andrew Fernando, Ceylon and King's College; Philip Charles Field, University College, Bristol; Richard Sydney Graham, St Mary's Hospital; Guy Fleetwood Haycraft, Guy's Hospital; Martin Hallam, Sheffield University; James Frank Hoare, University College Hospital; Maurice Lionel Corrie Irvine, St. Thomas's Hospital; John Lawrence Johnston Guy's Hospital; Walter Foulkes Jones, B.A. Cantab., Cambridge University, St. George's and King's College Hospitals; Abdus Sattar Khan, L.M. & S., Calcutta; Latafat Husain Khan, Bombay and St. Bartholomew's Hospital; Henry Goff Kilner, Middlesex Hospital; Framroze Kolaporewalla, Bombay and Guy's Hospital; Russell Hardy Sidney Marshall, St. Mary's Hospital; Charles Anderson Meaden, St. Bartholomew's Hospital; John Cecil Wilson Methven, London Hospital; James Knowles Milligan, St. Thomas's Hospital; Frank Cyril Morgan, University College, Bristol; Albert Edgar Nicholls, University College, Cardiff; Frederick Cecil Nichols, Bristol; Richard Goodhart Oram, Guy's Hospital; William Robert Parkinson, Otago and St. Thomas's Hospital; Guy Harcourt Peall, Guy's Hospital; Charles Arnold Pemberton, Otago and Middlesex Hospital; Arthur Thomas Pitts, L.D.S., Middlesex Hospital; Quintin Hume Richardson, Guy's Hospital; Archer Ryland, St Bartholomew's Hospital; Frank Stuart Tamplin, St. George's and King's College Hospitals; Jocelyn Langton Waller, St. Mary's Hospital; Thomas Newlands Watt, Otago; Walter Weir, St. Thomas's Hospital; Charles Whitaker, St. Bartholomew's Hospital; Cyril Underwood Whitney, Westminster Hospital; and Arthur John Ormsby Wigmore, University College, Bristol.

SOCIETY OF APOTHECARIES OF LONDON.—At the primary examination held recently the following candidates passed in the subjects indicated:—

PART I.

*Biology.*—C. R. Corfield, Manchester; and E. M. Johnstone, A. Jonathan, and A. Singha, Royal Free Hospital.
*Chemistry.*—J. B. Holmes, Manchester; and A. Singha, Royal Free Hospital.
*Materia Medica and Pharmacy.*—C. R. Corfield, Manchester; W. H. Hooton, Leeds; B. Robertshaw, Manchester; and H. H. Smith, Royal Free Hospital.

PART II.

*Anatomy.*—R. E. Clarke, London Hospital; A. H. C. Dawes, Westminster Hospital; B. McDermott, Guy's Hospital; G. S. Richardson, Leeds; S. H. Scott, Cambridge and London Hospital; and T. A. F. Tyrrell, St. Mary's Hospital.
*Physiology.*—E. C. Banks and A. Baxendale, Manchester; R. E. Clarke, London Hospital; A. H. C. Dawes, Westminster Hospital; B. McDermott, Guy's Hospital; M. Remers, Manchester; and T. A. F. Tyrrell, St. Mary's Hospital.

UNIVERSITY OF OXFORD.—The following degrees in Medicine have been conferred:—

*D.M.*—W. H. Wilson, Keble College.
*B.M., B.Ch.*—A. G. J. Thompson, Queen's College; O. A. R. Berkeley-Hill, Trinity College; and S. Nockolds and L. J. J. Orpen, Keble College.

UNIVERSITY OF GLASGOW.—In the fourth (final) professional examination the following have satisfied the examiners:—

*M.B., C.M.*—*Robert Stewart M'Kim, M.A.
*M.B., Ch.B.*—James Montgomery Anderson, ‡John Anderson, M.A., B.Sc., Thomas Barbour, M.A., B.Sc., George Duncan Morrison Beaton, Charles Burns, John Miller Hopkins Caldwell, William Rome Cammock, George Campbell, William Archibald Campbell, Henry Howard Christie, John Sawers Clark, M.A., James Coutts, Thomas Lawson Craig, §Arthur Muir Crawford, §James Richan Drever, M.A., Ernest Milne Eaton, William Gilbert, William Gillilan, §Arnold Harris Gray, Robert Neil Guthrie, Charles Francis Dyer Hammond, William Towers Hardie, Robert M'Cowan Hill, Alexander Hunter, Archibald Yuill Hutchison, John Keys, James Dunlop Kidd, William Hendrie Kirk, Alexander M'Call, Thomas M'Cririck, M.A., B.Sc., David Macdonald, ‡James M'Farlane, John Robert M'Gilvray, William Anderson M'Kellar, William Ferguson Mackenzie, Norman Smith MacNaughtan, Alister Argyle Campbell M'Neill, ‡Elizabeth Maud M'Vail, ‖Andrew Alexander M'Whan, Florence Mann, William Hislop Manson M.A., Robert Marshall, John Miller, ‡William Miller, ‡Peter Mitchell, M.A., Edith Oversby, James Hogg Paul, ‡Agnes Picken, M.A., Alexander MacMillan Pollock, Thomas Hoost Rankin, Vera Dagmar Reis, Frederick Gordon Robertson, §William James Rutherfurd, William Hermann Sieger, ‖William Smellie, Thomas Baillie Smith, ‖James Stevenson, ‡John Stevenson, Thomas Strain, David Laurence Tate, *Charles

Samson Thomson, ‖George Haswell Wilson, James Wyper, ‡John Young (Mount Vernon), and ‖Morris Youdelevitz Young.

Passed with distinction in: * (a) Surgery and Clinical Surgery, (b) Practice of Medicine and Clinical Medicine. † (a) Practice of Medicine and Clinical Medicine, (b) Midwifery. ‡ Surgery and Clinical Surgery. § Practice of Medicine and Clinical Medicine. ‖ Midwifery.

TRINITY COLLEGE, DUBLIN.—At the intermediate medical examination held in Trinity term the following candidates were successful:—

*Part II.*—Richard P. Hadden, Samuel F. A. Charles, John L. Phibbs Henry H. Ormsby, Albert V. J Richardson, Herbert V. Stanley Frederick A. Anderson, Charles W. Laird, George Halpin, George H. McHutcheson, Gerald G Mecredy, Robert de C Wheeler, William E. M. Armstrong, Edward J. H. Garstin, Frederick R. Sayers, Duncan F. Hunter, Henry R. Kenny, Arthur H. Laird, Harold S. Sugars, Richard T. Attridge John C. Baker, William H. Sutcliffe, William H. M'Carthy, and Frank Smartt.

The following medical scholarships have been awarded:—Anatomy and Institutes of Medicine: Johannes C. Pretorius, Trinity College Scholarship; and Samuel F. A. Charles, Stewart Scholarship. Physics, Chemistry, Botany, and Zoology: Arnold K Henry, Trinity College Scholarship; and David Duff Stewart Scholarship. Purser Medal in Institutes of Medicine: Richard P. Hadden.

FOREIGN UNIVERSITY INTELLIGENCE.—*Basle:* Dr. Friedrich Suter has been recognised as *privat-docent* of Urology and the Surgery of the Urinary Passages.—*Berlin:* Surgeon-General Kern of the Military Medical Academy has been appointed Professor of Pharmacognosis in the University.—*Graz:* Dr. Oskar Ebersteller, municipal medical officer, has been granted the rank and title of an Extraordinary Professor in the University.—*Lund:* Dr. A. Dalén has been promoted to an Extraordinary Professorship of Ophthalmology.—*Moscow:* Dr. Minakoff has been promoted to the Ordinary Professorship of Forensic Medicine.—*Prague (German University):* Dr. Otto Pfiffl has been appointed Extraordinary Professor of Otology and Rhinology.—*Tubingen:* Dr. Basler has been recognised as *privat-docent* of Physiology.—*Würzburg:* Dr. Ritter von Rindfleisch is retiring from the charge of the Pathological Institute and from the active duties of his chair.

WIGAN INFIRMARY.—Mr. W. Mitchell Roocroft, honorary surgeon to the Wigan Infirmary, has been appointed chairman of the board of management for the ensuing year.

CITY ORTHOPÆDIC HOSPITAL: AMALGAMATION SCHEME.—A special general meeting of the governors of this hospital was held in the board room of the hospital on July 11th, under the presidency of Mr. W. H. Brighten (solicitor to the hospital), when it was resolved—

That the amended proposals of the council of King Edward's Hospital Fund for amalgamation with the Royal and National Orthopædic Hospital be accepted.

Mr. John Poland, F.R.C.S. Eng., having pointed out that only surgeons possessing the qualification of F.R.C.S. Eng. would be eligible for election on the staff of the amalgamated hospital, it was decided to ask the trustees when making arrangements for the amalgamation to secure if possible that the present members of the medical staff of the City Orthopædic Hospital should be eligible for the new institution. Mr. Chisholm Williams, F.R.C.S. Edin., and Mr. Noble Smith, F.R.C.S. Edin., took part in the discussion.

GUY'S HOSPITAL.—The distribution of prizes at Guy's Hospital on July 4th by Sir W Cameron Gull was marked not only by the plain speaking of that gentleman on the subject of vivisection but also by the great interest shown in the Gordon Museum for pathological specimens. Sir W. C. Gull in the course of his address after delivering the prizes to the successful students declared that medical practitioners must keep abreast of the advances in medical science. He expressed surprise at the apathy of the public in regard to medical schools and observed that the reason might be found in the influence of that noisy section of the community which was endeavouring to persuade the public that vivisection was a great evil. Continuing, he declared that as for himself he fully believed that vivisection was absolutely essential to adequate training in medical science and he added that Guy's Hospital could speak freely on the matter, for the governors had never supported the school out of the funds subscribed for the hospital. He concluded with the assertion that if the public would realise the great needs of the medical school he was sure that they would be more generous. The Gordon Museum was presented to Guy's Hospital by Mr. Robert Gordon, a governor of the hospital, and was opened in 1905. It is arranged in four bays, top-lighted and intercommunicating. It contains 13,500 superficial feet for the accommodation of specimens on shelves and in show-cases. Here are housed the collection of pathological specimens for which the school at Guy's Hospital has always been famous and the unique collection of wax models, fashioned by Joseph Towne from dissections by John Hilton. Attention was also directed to a collection of old instruments and other objects of historical or antiquarian interest connected with Guy's Hospital.

# Parliamentary Intelligence.

## HOUSE OF COMMONS.

THURSDAY, JULY 5TH.

*Switzerland and Vaccination.*

Mr. LUPTON asked the Secretary of State for Foreign Affairs whether he would ascertain and inform the House which of the cantons constituting the Swiss Republic had abolished compulsory vaccination and which of them still enforced it; and whether the population of the cantons in which compulsion had been retained showed a liability to small-pox greater or less than the liability shown by the population of the cantons which had abolished compulsion.—Mr. RUNCIMAN, who replied, said: Our latest information (1900) respecting vaccination law in Switzerland represents two cantons as having never passed such law, nine cantons as having repealed a former vaccination law, two cantons as not enforcing their vaccination law, and 12 cantons as having vaccination law more or less in force. Switzerland in recent years had not suffered much small-pox; in the period 1900-04 (inclusive) there occurred in that country some 800 cases only of the disease. These cases were fairly evenly distributed between the 13 cantons not enforcing and the 12 cantons giving effect to vaccination law. But though the disease might be regarded as fairly evenly distributed in the five years in question over the whole population, it affected very differently children under ten years of age. Of the 800 odd small-pox attacks 180 were of children under ten years of age, and of these 180 children 26 were recorded as vaccinated, while 154 were returned as unvaccinated. Of the 26 vaccinated children taking small-pox none died, whereas of the 154 recorded as unvaccinated and attacked by the disease 27 died.

*Enteric Fever at an Asylum.*

Mr. COOPER asked the President of the Local Government Board whether his attention had been directed to the outbreak of enteric fever at the Belmont Imbecile Asylum, Sutton; whether any delay arose in notifying the disease to the local sanitary authority; and whether the cause of the infection had been discovered.—Mr. JOHN BURNS answered: I am aware of the outbreak referred to. There was some delay in the notification to the sanitary authority. That was due to the fact that many of the cases, especially the earlier ones, presented peculiar symptoms and that it was not until bacteriological tests had been applied that a diagnosis of enteric fever was arrived at.

MONDAY, JULY 9TH.

*The Public and Infectious Hospitals.*

Sir JOHN JARDINE asked the President of the Local Government Board whether he was aware that, although the rules of the Metropolitan Asylums Board strongly discountenanced the making of personal inquiries at infectious hospitals by the friends of patients and stated that all inquiries must be made in writing to the medical superintendent, delay frequently occurred in answering such inquiries, and information was not given either to the nearest relative or to the certifying medical attendant as to the diagnosis of the case after admission; whether he was aware of instances in which, from misunderstanding or ignorance of the rules, or other causes, relatives of patients received no official information whatever during the whole period of detention of the patient; and whether, as the removal of patients was practically compulsory, he would cause a circular to be issued to the Metropolitan Asylums Board and other similar authorities outside the London area, prescribing forms for brief reports to be sent to relatives at prescribed and frequent intervals, whether formally applied for or not, and for a report on the diagnosis and bacteriological examination of the case to be sent to the medical practitioner by whom the case was certified.—Mr. JOHN BURNS answered: The managers of the Metropolitan Asylum District have, as I am informed, no reason to believe that delay frequently occurs in answering letters of inquiry concerning patients in their hospitals nor have I received complaints on the subject. I understand that the certifying medical practitioner is always informed by the medical superintendent of the hospital when the latter does not agree with the certified diagnosis of the case. Notice of the arrival of a patient at a hospital of the managers is always sent to the parents or other nearest known relative or friend. Extracts from the regulations are printed on the notice and these show that inquiries as to the condition of the patient may be made in writing to the medical superintendent, who will send an early reply, and that should the patient become dangerously ill notice will be sent to the nearest known relative or friend with an intimation that the patient may be visited. I believe, too, that as regards the hospitals of local authorities outside London it is the general rule to give notice where the patient is dangerously ill. As at present advised, I do not think there is sufficient ground for adopting the suggestion in the last part of the question which would involve considerable expense as well as labour to those concerned. I think that the object which my honourable friend has in view will be sufficiently met by the public attention which will be drawn to the matter by his question.

*Boards of Guardians and Fees for Primary Vaccination.*

Mr. HUDSON asked the President of the Local Government Board whether his attention had been called to the existing scale of fees for

primary vaccination by the several boards of guardians, and whether, in view of the financial burden imposed on them, he could take immediate steps to alter the scale of fees and cost of administration of the Vaccination laws.—Mr. JOHN BURNS replied: Yes, sir; my attention has been called to this subject and it is receiving my consideration.

*Australian Tinned Meat Trade.*

Mr. WILLIAM REDMOND asked the Under Secretary of State for the Colonies whether the Colonial Office had received any representations as to the position of the tinned meat trade in New South Wales; and whether he had any official information that the system of inspection in operation in Australia was so rigorous and careful that the occurrence of any abuse was impossible, and that consequently there had been no complaint whatever as to the excellence of the article supplied by the Australian trade.—Mr. CHURCHILL replied: Since the honourable Member's question was put to me on July 2nd a letter has been received from the Agent-General for New South Wales pointing out that special care is exercised by the New South Wales Government that only healthy beasts are slaughtered for food, and both in freezing and canning works every precaution is taken to insure that cleanly methods are adopted. All animals intended for human food are first of all inspected alive in the sale yards by Government veterinary experts. These inspectors are either veterinary surgeons or have passed a thorough examination in the detection of diseases both in live stock and meat. Subsequently the carcasses are inspected in the slaughter-houses which are also under Government control. In transit, in shops, and in other places frequent inspections are made and these extend in every instance to the whole premises and to all meats or parts of the carcass. Not only this, but the utensils and appliances, in addition to the blood, offal, &c., are inspected, and were any breach of the regulations regarding cleanliness to occur the licence to such premises would be at once withdrawn. The Government inspectors have to make weekly reports with particulars of the numbers of cattle slaughtered. Not only has every slaughtering establishment to be licensed but every person intending to slaughter cattle for food has to give 12 hours' notice to the inspector to enable him to be present, a penalty of £5 being inflicted for every head of cattle which has been slaughtered without proper notice having been given. The laws against the slaughtering for food of any cattle that are in any way diseased are strict, and if an inspector finds the milt or spleen of any slaughtered animal to be diseased he causes the entire carcass to be removed and destroyed under penalty of a fine from £10 to £50. Any person taking such beast to slaughter is liable to imprisonment for a term not exceeding two years, with or without hard labour, and anyone attempting to sell such diseased meat is liable to a long term of imprisonment. In the establishments where meat is being prepared for canning, &c., the regulations are especially strict. I desire to correct a mistake which was unfortunately made in my answer to the honourable Member's question on July 2nd. I then stated that no tinned meat was exported from New South Wales to this country. I should have stated that no boneless meat was exported. Tinned meat is imported from New South Wales and also from Queensland in considerable quantities and in smaller quantities from South Australia and Victoria. I understand that in the principal works in Australia where the preserved meat industry is carried on the beasts are killed purely and solely for preserving purposes and only the finest parts of them go into the tins.

TUESDAY, JULY 10TH.

*Health Conditions of Tin-plate Manufacture.*

Mr. SUMMERBELL asked the Secretary of State for the Home Department whether his attention had been called to the fact that there were 250,000 persons employed in the manufacture of tin- and black-plate; that the manufacture of such articles took place under unhealthy and dangerous conditions; and whether it was his intention to afford more inspection to tin-plate works.—Mr. GLADSTONE answered: The number of persons employed in the manufacture of black- and tin-plate in this country is, I think, very much smaller than that stated in the question. I am unable to give the exact figures, as in the Factory Department's tables the industry is included under the heading "Conversion of iron into steel, &c" but the total number under this heading in 1901 was 138,693 and the black- and tin-plate workers would form only a small part. According to the figures of the 1901 census the number employed in the manufacture of tin-plate was just over 15,000. The industry was made the subject of special inquiry in the years 1899 to 1901 and a conference was held with the manufacturers at which certain suggestions for protecting the workers against injurious fumes and dust were discussed. I will call for a special report as to the progress that has been made since then and the present conditions of the industry.

## BOOKS, ETC., RECEIVED.

BAILLIÈRE ET FILS, J. B., 19, Rue Hautefeuille, Paris.

Le Rein Mobile. Par Félix Legueu, Professeur agrégé à la Faculté de Médecine de Paris, Chirurgien de l'Hôpital Tenon. ("Les Actualités Médicales" Series.) Price Fr.1.50

BAILLIÈRE, TINDALL AND COX, 8, Henrietta-street, Covent Garden, London, W.C.

Introduction to A New Method of Respiratory Vocal Re-Education. By F. Matthias Alexander. Price 1*s.*

CONSTABLE, ARCHIBALD, AND CO., LIMITED, London. (HOUGHTON, MIFFLIN, AND CO., Boston and New York.)

The Subconscious. By Joseph Jastrow, Professor of Psychology in the University of Wisconsin. Price 10*s.* net.

FISCHER, GUSTAV, Jena.

Einführung in Das Studium der Malariakrankheiten, mit besonderer Berücksichtigung der Technik. Von Dr. Reinhold Ruge, Marine-Generaloberarzt und Professor an der Universität Kiel. Zweite, gänzlich umgearbeitete Auflage. Price M.11; geb. M.12.

Lehrbuch der Allgemeinen Pathologie und der Pathologischen Anatomie. Für Aerzte und Studierende. Von Dr. Ernst Ziegler, Weiland Professor der Pathologischen Anatomie und der Allgemeinen Pathologie an der Universität Freiburg im Breisgau. Hilfte neu bearbeitete Auflage. Zweiter Band. Spezielle Pathologische Anatomie. Price M.16; geb. M.18.

Untersuchungen über Muskelzustände. Von Professor Rieger. Begrüssungs-Schrift dem Zweiten Kongress für Experimentelle Psychologie (Würzburg, April, 1906), dargebracht von der Psychiatrischen Klinik der Universität Würzburg. Price M.2.

# Appointments.

*Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

COOPER, R. HIGHAM, L.S.A., has been appointed Radiographer to the Evelina Hospital for Sick Children.

FERGUSON, ROBERT J., M.D., M.Ch., M.A.O.R.U.I., F.R.C.S.Eng., has been appointed Gynæcological Registrar to the Kensington General Hospital.

GRAHAM, J., M.B., Ch.B. Edin., has been appointed Clinical Assistant to the Chelsea Hospital for Women.

HUSTLER, G. H., M.B., Ch.B. Leeds, has been appointed Assistant House Surgeon at the Royal Devon and Exeter Hospital, Exeter.

LAING, E. A. R., L.R.C.P. & S. Edin., L.F.P.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Rochford District of the county of Essex.

MACKINTOSH, F. I., M.B., M.S. Aberd., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Strathmiglo District of the county of Fife.

ROSE, FRANK A., M.B., B.C. Cantab., F.R.C.S. Eng., has been appointed Assistant Surgeon to the Hospital for Diseases of the Throat, Nose, and Ear, Golden-square.

SAWYER, JAMES E. R., M.D. Oxon., M.R.C.P. Lond., has been appointed Casualty Assistant Physician to the General Hospital, Birmingham.

SHEPPARD, AMY, M.B. Lond., D.P.H. Cantab., has been appointed Ophthalmic Surgeon to the New Hospital for Women and Children, Euston road.

STEVENS, W. MITCHELL, M.D. Lond., M.R.C.P. Lond., has been appointed Lecturer in Materia Medica and Pharmacology to the University College of South Wales and Monmouthshire, Cardiff.

TRIBE, R. H., M.R.C.S., L.R.C.P. Lond., has been appointed Anæsthetist to the Victoria Hospital for Children, Chelsea.

# Vacancies.

*For further information regarding each vacancy reference should be made to the advertisement (see Index).*

BEVERLEY, EAST RIDING LUNATIC ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £150 per annum, with board, apartments, and washing.

BIRMINGHAM, UNIVERSITY OF.—Walter Myers Travelling Studentship. Value £150 for one year.

BRADFORD POOR-LAW UNION HOSPITAL AND WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

BRADFORD ROYAL INFIRMARY.—Dispensary Surgeon, unmarried. Salary £100 per annum, with board and residence.

BRIGHTON, SUSSEX COUNTY HOSPITAL.—House Physician, unmarried. Salary £70 per annum, with board and residence.

BRIGHTON THROAT AND EAR HOSPITAL, Church-street, Queen's-road.—Non-resident House Surgeon for six months, renewable. Salary at rate of £75 per annum.

BURNLEY, VICTORIA HOSPITAL.—Resident Medical Officer. Salary £100, with residence, board, and washing.

CAMBRIDGESHIRE, &C., ASYLUM.—Second Assistant Medical Officer, unmarried. Salary £120 per annum, with board, lodging, and attendance.

CANCER HOSPITAL, Fulham-road, London, S.W.—Medical Officer in Charge of Electrical Department. Honorarium £26 5*s.* per annum.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL AND DISPENSARY.—Junior House Surgeon. Salary £50 a year, with board, apartments, and laundry.

CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, Victoria Park, E.—House Physician for six months. Salary at rate of £50 per annum, with board, residence, &c.

DERBY, DERBYSHIRE ROYAL INFIRMARY.—Assistant House Surgeon for six months. Salary £30, with board, residence, and washing.

DEVONPORT, ROYAL ALBERT HOSPITAL.—Assistant to the Resident Medical Officer for six months. Salary at rate of £50 a year, with board and lodging.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—Pathologist and Registrar. Salary £100 per annum.

EGYPTIAN GOVERNMENT, MINISTRY OF EDUCATION.—Professor of Midwifery and Gynæcology. Salary £400 a year. Also Medical Tutor and Registrar to Kasr-el-Ainy Hospital. Salary £400 a year.

EVELINA HOSPITAL FOR SICK CHILDREN, Southwark Bridge-road, S.E.—Physician to Out-patients.

GLOUCESTER GENERAL INFIRMARY AND THE GLOUCESTERSHIRE EYE INSTITUTION.—Assistant House Surgeoncy for six months. Salary at rate of £30 per annum, with board, residence, and washing.

HARTLEPOOLS HOSPITAL.—House Surgeon. Salary £100 per annum, with board, washing, and lodging.

HEREFORD GENERAL HOSPITAL.—House Surgeon, unmarried. Salary £100 per annum, with board, apartments, and washing.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Physician, unmarried, for six months. Salary £20, with board and residence. Also Assistant Casualty Medical Officer, unmarried, for six months. Salary £20, with board and residence, &c. Also Radiographer.

HOSPITAL FOR SICK CHILDREN, Newcastle-on-Tyne.—Resident Medical Officer. Salary £100, with board, lodging, and laundry.

HOSPITAL FOR WOMEN, Soho-square, W.—Medical Registrar. Honorarium 25 guineas.

HULL, ROYAL INFIRMARY.—Casualty House Surgeon. Salary £50 per annum, with board and lodging.

KENSINGTON GENERAL HOSPITAL, Earl's-court, S.W.—Junior House Physician for six months. Salary £40 per annum, with board, washing, and residence.

LEEDS UNIVERSITY OF, SCHOOL OF DENTISTRY.—Lecturers in: (1) Dental Surgery; (2) Operative Dental Surgery; (3) Dental Anatomy and Physiology; and (4) Dental Mechanics.

LEITH HOSPITAL.—Honorary Assistant House Surgeon and Assistant House Physician, both for six months.

LINCOLN LUNATIC HOSPITAL.—Assistant Medical Officer. Salary £100, with board, &c.

LIVERPOOL EYE AND EAR INFIRMARY, Myrtle street, Liverpool.—House Surgeon. Salary £80 per annum, with board and residence.

LIVERPOOL, WEST DERBY UNION INFIRMARY.—Assistant Resident Medical Officer, unmarried. Salary £125 per annum, with board.

MANCHESTER MONSALL FEVER HOSPITAL.—Fourth Medical Assistant. Salary £100 per annum, with board, lodging, and washing.

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT AND CHEST.—Assistant Medical Officer for the new Crossley Sanatorium. Salary £50 per annum, with board, apartments, and laundry.

MANCHESTER, UNIVERSITY OF.—Junior Demonstrator in Physiology. Salary £100, rising to £150 per annum. Also Lecturer in Dental Surgery. Also Lecturer in Dental Prosthetics.

NEWCASTLE, CO. WICKLOW, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION FOR IRELAND.—Resident Medical Officer. Also Assistant Resident Medical Officer. Salaries £100 and £50 respectively, with residence, board, and laundry.

NORWICH, NORFOLK AND NORWICH HOSPITAL.—Surgeon and Assistant Surgeon.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—Assistant House Surgeon for six months, renewable. Salary at rate of £50 per annum, with board, residence, and washing.

PRESTON ROYAL INFIRMARY.—Senior House Surgeon. Salary £100 per annum, with board, lodging, washing, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

SHEFFIELD ROYAL HOSPITAL.—Assistant House Surgeon, unmarried. Salary £50 per annum, with board and lodging.

SHEFFIELD UNION HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with apartments, rations, &c.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Salary at rate of £40 per annum, with board, washing, and residence.

VICTORIA HOSPITAL FOR CHILDREN, Tite-street, Chelsea, S.W.—House Physician for six months. Honorarium £25, with board and lodging.

WEST RIDING ASYLUM, Wadsley, near Sheffield.—Fifth Assistant Medical Officer. Salary £140, rising to £160, with board, &c.

WINDSOR AND ETON ROYAL DISPENSARY AND INFIRMARY.—House Surgeon, unmarried. Salary £120 per annum, with residence, board, laundry, and attendance.

WOLVERHAMPTON AND MIDLAND COUNTIES EYE INFIRMARY.—House Surgeon. Salary £70 per annum, with rooms, board, and washing.

WORCESTER GENERAL INFIRMARY.—House Physician. Salary £80 per annum, with board and residence.

THE Chief Inspector of Factories, Home Office, S.W., gives notice of vacancies as Certifying Surgeons under the Factory and Workshop Act at Sligo, in the county of Sligo, and at Ely, in the county of Cambridge.

# Births, Marriages, and Deaths.

## BIRTHS.

COOPER.—On July 2nd, at Fownhope, Surbiton Hill, the wife of Harry Cooper, M.A., M.D., of a son.

CUNNINGHAM.—On July 7th, at Firenze, Malone Park, Belfast, the wife of R. H. B. Cunningham, M.D., F.R.C.S.I., of a daughter.

KING.—On July 10th, at St. Leonard's, Osmaston-road, Derby, to Dr. and Mrs. J. W. King, a son.

SPEIRS.—On June 29th, at The Cedars, Diss, the wife of Dr. H. Meredith Speirs, of a son.

## MARRIAGES.

CUNNING—THIN.—On July 4th, at Trinity Presbyterian Church, Claughton, Birkenhead, Joseph Cunning, F.R.C.S. Eng., to Annie B. Thin, M.B. Lond.

DIXSON—ROBERTSON.—On July 5th, at St. Paul's Church, Brentford, Charles Frederick Lyne Dixson, M.D., M.R.C.S., to Jessie May Robertson, eldest daughter of Mrs. Newcombe of Clovelly, Boston-road, Brentford.

## DEATH.

HILL.—On July 6th, at St. Keverne, Lymington, Hants, William Robinson Hill, M.D., J.P., aged 70 years.

*N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.*

# Notes, Short Comments, and Answers to Correspondents.

## MR. TROUTBECK AND QUACKS.

WE have upon so many occasions felt compelled to differ seriously from Mr. Troutbeck's views upon matters medical that it is with all the more pleasure that we take the opportunity to praise him in connexion with his admirable remarks upon quacks, as delivered at an inquest recently held by him. The subject of the inquest was the death of a man named George Buckland who died from hæmorrhage caused by pulmonary tuberculosis. He was under the treatment by correspondence given by a quack establishment known as the Weidhaas Institute, Burgess Hill, Sussex. We have known of this place for some time as being run by a person calling himself Paul Weidhaas, although we have no information as to whether he is alive at the present date or not. The coroner, after remarking upon the various remedies recommended by the institute, which included such things as "calf packing" and "cat tea straw," said that the law was particularly tender to quacks, allowing them to practise and to make large fortunes out of wretchedly poor people who were suffering from mortal diseases and who therefore were tempted to try these so-called remedies. He did not suppose that the "treatment accelerated the man's death, but it certainly could have done him no good." Mr. Troutbeck's remarks are admirable, but we wish that he had included in his censures the proprietors of newspapers and magazines who never hesitate to publish advertisements of the most flagrant quack preparations. If the quack could not obtain advertisement of his wares in the daily press and in magazines his chances of inveigling dupes would be much diminished. Legal interference with quackery is not to be expected in the shape that our more ardent reformers anticipate, but those who hope to see all quacks obliged to pay a heavy licence to "practise" will receive encouragement from Mr. Troutbeck's attitude.

## A POINT IN POOR-LAW.

*To the Editors of* THE LANCET.

SIRS,—There is no question that your ruling (in THE LANCET of July 7th) is correct that a Poor-law medical officer must attend paupers removed to an isolation hospital provided that that hospital is within his district and the paupers are *bonâ fide* inhabitants of his district also. The service has been forced upon me twice. In one case I had for nearly a year to attend the inmates of an isolation hospital temporarily established in an empty house, fortunately for me situated near my house. When I tried to get some extra payment for my services I was warned privately not to press the claim as I should not get it, and it was pointed out that I had been a gainer to the extent of attending these people in well-appointed surroundings at a convenient distance when they might have been scattered all over a large and hilly district in miserable cottages. On another occasion a case of confluent small-pox occurred in a cottage four miles from me in the person of a well-to-do labourer; the practitioner who saw him first refused to attend him further after he had made the diagnosis and an order was served on me. A camp for small-pox was established in my district and this case and others were moved to it; I had to attend them and received no extra fee. There is nothing to prevent any district council, which is also a board of guardians, refusing to pay medical officers for its isolation hospital and compelling the inmates to pay for their own medical attendance or to be attended by the Poor-law medical officer; the latter cannot claim any payment for his services in such a case unless the patients reside out of his own district. This is not a satisfactory state of things both for Poor-law medical officers and the profession at large.

I am, Sirs, yours faithfully,

July 7th, 1906. EDUAM.

## CONCERNING POMEROYS.

THERE have been few more popular English novelists than the late Mrs. Henry Wood. The total circulation of her books was something colossal and although superior persons affected to regard them as being written rather for the domestic servant than the educated student she was a thoroughly good story teller and a shrewd observer of certain phases of English domesti life. She was not, however, a good delineator of people outside the middle and lower middle classes, her earls and baronets having a lurid tendency to fine language, ostentation, and crime. We remember one aristocratic family, "The Pomeroys of Pomeroy," who were described with extraordinary unction for the delectation of the pantry, who were recognised by the countryside as being of such superior clay that they received a sort of courtesy peerage from their neighbours (for the Crown did not happen to have ennobled them), and who throughout a long novel betrayed a whole-hearted belief that a Pomeroy must be haughty and baronial and impossible. The characters seemed incredible, and yet Mrs. Henry Wood may not have overdrawn them, for we learn from a Southport paper that the Honourable Ernest Pomeroy—the coincidence of the name is a little striking—has been elected President of a League of Medical Freedom and that in a letter expressing sympathy with the general

objects of the league Mr. Pomeroy has said: "Medical men were more anxious for guineas than anything else and their various prescriptions are in the main harmful. If all doctors were crucified to-morrow and we were delivered from them and sanitary authorities, the general life would be healthier and happier." There spoke a genuine Pomeroy of Pomeroy as fashioned by Mrs. Henry Wood; there spoke a proof of the verisimilitude of characters which short-sighted critics have declared to have no counterpart in life. The haughty contempt for doctors and low scientific persons, the hale-me-this-fellow-to-a dungeon attitude, and the crass stupidity of the sentiments make up a picture of the nobleman dear to the unlettered devourers of fiction, and the many authors who toil in Mrs. Henry Wood's wake far in her wake—must be grateful to Mr. Ernest Pomeroy for justifying their portraiture of a type.

### UNMANNERLY.

*To the Editors of* THE LANCET.

SIRS,—Upon reading the correspondence in THE LANCET of July 7th, p. 64, I was more than thunderstruck with the slur which "M.D. Lond." and one who is "on the staff of a hospital" tries to work off against the holders of the L.R.C.S., L.R.C.P. Edin.—"I might add as facts relevant to the issue that Dr. D is L.R.C.S. and L.R.C.P. Edin." "M.D. Lond." should know that there is a possibility of honourable men possessing the diploma of the Conjoint Board of Scotland. In no circumstance could you excuse Dr. D for his mistake or unmannerly conduct. But why should all "L.R.C.S., L.R.C.P. Edin." be classed in the same box with Dr. D I have as much right to class all men who are "on the staff of a hospital" in the class which I shall now record and ask "M.D." if he is willing to be classed with such conduct. A patient of my own who was suffering from appendicitis required operation. Mr. A, as we shall call him, was asked by his employer to see Dr. B who operated upon Mr. A without even acquainting Dr. C, the present writer, of the fact. Of course Dr. B was "on the staff of a hospital." No doubt honourable conduct for gentlemen who are "on the staff of a hospital." Then here is a little more of my experience with M B's. One, Dr. D, went the length of examining a patient of my own and prescribing for the patient without being asked and without fee. Honourable conduct, no doubt, for an M B. Dr. E, who is an M D., is very fond of frequenting hairdressers' shops and giving nicknames to all medical men in the district, he himself, no doubt, posing as the paragon of virtue. If "M D." is willing to accept such conduct as honourable for M.B.'s and M.D.'s he should, at least, respect honourable men, though they belong to the L.R.C.S & L.R.C.P. Edin. and not cast a slur upon all for one. I inclose my card.

I am, Sirs, yours faithfully,

July 9th, 1906. L.R.C.S. & L.R.C.P. EDIN.

*** We did not read "M.D. Lond.'s" letter as our correspondent L.R.C.S & L.R.C.P Edin. has done. "M.D. Lond.'s" allusion to Mr. D's diplomas and his own qualification and standing were made, it appeared to us, to show that it was unreasonable as well as rude of Mr. D to refuse a consultation in such uncompromising terms. We do not see in "M.D. Lond.'s" remark any classification of all L.R.C.S., L.R.C.P. Edins. "in the same box with Dr. D."—ED. L.

### THE COUNTRY IN TOWN EXHIBITION.

THE object of the organisers of the Country in Town Exhibition, opened by Princess Christian on July 5th, was to show East Londoners what can be done to bring into the heart of such a grimy city as theirs something of the beauty, freshness, and inspiration of nature. The organisers have succeeded in their attempt and are to be congratulated upon the instructive and pleasing collection of animate and inanimate objects which they have brought together in the Whitechapel Art Gallery. The various exhibits, almost all of them, contain a lesson of profound interest for those who would like to see our streets and houses beautified by drawing upon the resources of a country rich above most in rural beauty. Accordingly we find exhibited most of the members of the vegetable kingdom that can be grown under the restricted conditions which prevail in the metropolis. The curator of the Chelsea Physic Garden, for example, showed a large collection of hardy ferns and Alpine and other plants of different characters which, for this reason or that, thrive, perhaps even come to perfection, in London. The famous garden of the Apothecaries' Society, however, has an airy site on the north bank of the river, the south bank in that neighbourhood being occupied by Battersea Park, and such an airy habitat gives it advantages that are not usually enjoyed in any city. Private firms show similar collections of plants, and if the pot-grown plants, witnesses of the love and tender care of the poor children of our slum schools and the blind children of one of our London County schools, do not turn out to be prize specimens from the flower-show point of view, they prove at any rate how much can be done by floriculture for homes otherwise lacking in brightness. The authorities of the Central Foundation School in Spital-square, E., send an interesting exhibit. The complaint is sometimes made that nature study cannot be carried out in schools in the midst of workshops and factories, but the teachers of this school show a remarkable testimony to the intelligence of their scholars. Maps have been made of such open spaces as there are in the district and the children are taken to these tiny cases, recording the observations made in their excursions both in writing and graphically with crayon and brush. Many of the drawings are crude but they show how much of living nature can be seen under conditions where many people would see nothing. An excellent exhibit of Alpine plants was grown in window-boxes by Mr. Edward Lovett who also sent a photograph of a pot of edelweiss grown on the roof of the Bank of England. The paintings of native orchids, the originals of which were grown in frames by Mr. C. E. Clark, a schoolmaster at Hammersmith, are also very interesting. The exhibition, which is under the patronage of Her Majesty the Queen, is open free daily from 12 noon till 10 P.M. until July 19th.

### THE PREVENTION OF ANTHRAX.

WE have received from the Home Office a placard of about 20 inches by 12, printed in large clear type, briefly descriptive of the cause of anthrax, its propagation, and the naked-eye appearance of the lesion when the infection takes place on the surface of the skin. At the top of the placard are illustrations of three patches of skin printed in colours of about six centimetres square, showing the common appearance of anthrax on the first or second day, on the third or fourth day, and at a later stage. The placard has been prepared by Dr. T. M. Legge, medical inspector of factories, to aid manufacturers, foremen, workers, and others, in recognising the early appearance of anthrax and to impress on them the importance of prompt treatment. Dr. Legge is to be congratulated on having produced such an excellent aid for the prompt recognition of this serious disease and if the placard is framed and posted in some prominent place in workshops where the nature of the business exposes workmen to anthrax it should have the effect of preventing fatal consequences by causing them to seek early and effective medical treatment.

*A. B.* (Lytham).—There is nothing about the condition which would offer any difficulty to our correspondent's medical attendant.

*R. D. P.* will be glad to know of any authoritative literature on the diet of Eastern races.

ERRATUM.—In the paragraph headed "Medical Barri ters" on p. 185 of THE LANCET of June 30th the medical degree of Dr. John Stokes of Sheffield should be M.D. Durh.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

# Medical Diary for the ensuing Week.

## OPERATIONS.

### METROPOLITAN HOSPITALS.

**MONDAY (16th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (3 P.M.).

**TUESDAY (17th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (2 P.M., Ophthalmic, 2.15 P.M.).

**WEDNESDAY (18th).**—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.), Children, Gt. Ormond-street (9.30 A.M., Dental, 2 P.M.).

**THURSDAY (19th).**—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.), Royal Ear (2 P.M.), Children, Gt. Ormond-street (2.30 P.M.).

**FRIDAY (20th).**—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Children, Gt. Ormond-street (9 A.M., Aural, 2 P.M.), St. Mark's (2.30 P.M.).

**SATURDAY (21st).**—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Children, Gt. Ormond-street (9.30 A.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (2 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

## LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

**MONDAY (16th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. J. H. Sequeira: Clinique. (Skin.) 5.15 P.M.: Lecture:—Dr. J. M. H. MacLeod: The Treatment of Psoriasis.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. 2.15 P.M.: X Rays. 2.30 P.M.: Operations. Mr. Dunn: Diseases of the Eye.

**TUESDAY (17th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Dr. L. Guthrie: Clinique. (Medical.) 5.15 P.M.: Lecture:—Dr. C. G. Hawthorne: Pulse Tracings and their Clinical Significance.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10.30 A.M.: Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball and Dr. Davis: Throat, Nose, and Ear Department. 2.15 P.M.: X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M.: Clinical Lecture:—Dr. J. Collier: Congenital Cerebellar Ataxy.

**WEDNESDAY (18th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. J. Clarke: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Dr. P. Stewart: Recurrent and Transient Palsies.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball and Dr. Davis: Throat, Nose, and Ear Department. Dr. Saunders: Diseases of Children. 2 P.M.: Medical and Surgical Clinics. 2.15 P.M.: X Rays. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

CENTRAL LONDON THROAT AND EAR HOSPITAL (Gray's Inn-road, W.C.).—5 P.M.: Demonstration:—Mr. C. Nourse: Nasal Accessory Sinuses.

**THURSDAY (19th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M.: Lecture:—Mr. T. Walker: On the Methods of Estimating the Function of the Kidneys.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—2 P.M.: Medical and Surgical Clinics. 2.15 P.M.: X Rays. 2.30 P.M.: Operations. Mr. Dunn: Diseases of the Eye.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond street, W.C.).—4 P.M.: Lecture:—Mr. Fairbank: Some Surgical Affections of the Mouth in Children.

**FRIDAY (20th).**—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M.: Mr. M. Yearsley. Clinique. (Ear.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10.30 A.M. Dr. Moullin: Gynæcological Operations. 2 P.M.: Medical and Surgical Clinics. Dr. Ball and Dr. Davis: Throat, Nose, and Ear Department. 2.15 P.M.: X Rays. 2.30 P.M.: Operations. Dr. Abraham: Diseases of the Skin.

**SATURDAY (21st).**—POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—10 A.M.: Dr. Ball and Dr. Davis: Throat, Nose, and Ear Department. 2 P.M.: Medical and Surgical Clinics. 2.15 P.M.: X Rays. 2.30 P.M.: Operations. Dr. Robinson: Diseases of Women.

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## MANAGER'S NOTICES.

### THE INDEX TO THE LANCET.

THE Index to Vol. I. of 1906, which was completed with the issue of June 30th, and the Title-page to the Volume, were given in THE LANCET of July 7th.

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*(Taken daily at 8.30 a.m. by Steward's Instruments.)*

THE LANCET Office, July 12th, 1906.

| Date. | Barometer reduced to Sea Level and 32° F. | Direction of Wind. | Rainfall. | Solar Radia in Vacuo. | Maximum Temp. Shade. | Min. Temp. | Wet Bulb. | Dry Bulb. | Remarks. |
|---|---|---|---|---|---|---|---|---|---|
| July 6 | 29·96 | S.W. | ... | 120 | 79 | 59 | 59 | 64 | Cloudy |
| " 7 | 30·02 | WSW | ... | 125 | 77 | 58 | 59 | 62 | Cloudy |
| " 8 | 30·20 | W. | ... | 115 | 75 | 60 | 60 | 64 | Cloudy |
| " 9 | 30·28 | N.E. | ... | 119 | 75 | 60 | 61 | 66 | Fine |
| " 10 | 30·17 | N.E. | ... | 114 | 72 | 59 | 57 | 62 | Cloudy |
| " 11 | 30·16 | N.E. | ... | 116 | 69 | 54 | 55 | 59 | Cloudy |
| " 12 | 30·19 | N.E. | ... | 114 | 64 | 54 | 54 | 60 | Cloudy |

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